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BENJAMIN FRANKLIN, JONATHAN WILLIAMS
AND THE UNITED STATES
MILITARY ACADEMY

by

Dorothy Zuersher

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the Faculty of the Graduate School at
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This study investigated the possibility that a connection existed between the educational ideas of Benjamin Franklin and the curriculum and goals of the United States Military Academy. The connecting link was Jonathan Williams, Franklin's grandnephew and the first superintendent of the Military Academy. The investigation led to a study of the educational views and proposals of Benjamin Franklin, the relationship between Franklin and Jonathan Williams, and the part played by Williams in the early development of the Military Academy.

Since most of Franklin's works concerning education have been published, these provided the basis from which Franklin's educational views were drawn. However, to fully understand the relationship between Franklin and Jonathan Williams and between Williams and the Military Academy, unpublished manuscripts were consulted. The manuscript collection at the Library of the United States Military Academy as well as the Williams' Papers held at the Lilly Library of Indiana University contributed valuable information to this study. In addition, the records of the Secretary of War for the period 1800-1812 were examined as they pertained to the Military Academy.

Benjamin Franklin recognized that the existing classical curriculum was obsolete. He realized that the rapidly changing and secularized society of his and succeeding generations would necessitate a new form of

educational preparation. Franklin believed that education was not only a means of personal fulfillment and growth, but a prerequisite to the material and moral progress of the new country. He designed an educational institution that would emphasize the knowledges most necessary for a growing number of middle class occupations and professions. He stressed the study of English, history, science, and mathematics. He thus became the progenitor of the utilitarian trend in American education.

Jonathan Williams' long and intimate friendship with his great uncle began in 1770 and continued until Franklin's death in 1790. Under Franklin's tutelage, Williams developed an interest in science, as deep as Franklin's own. Like Franklin, Williams sought to turn new scientific discoveries to practical applications that would benefit mankind.

In 1802, Thomas Jefferson appointed Williams as the first superintendent of the fledgling Military Academy. Under Williams' direction the Academy became the first school of scientific engineering in the country. Its curriculum included mathematics, science, drawing, French, and practical applications in the field. The Academy's graduates fulfilled a service to the country that far exceeded their number. They directed the building of many of this country's public works including its roads, railroads, canals, and lighthouses. In addition, many became teachers of science and engineering in other educational institutions.

It is this writer's conclusion that the educational ideas of Benjamin Franklin, preserved by Jonathan Williams, became the dominant characteristics of the early stages of the United States Military Academy.

ACKNOWLEDGMENTS

The writer wishes to express her gratitude to Thomas Fleming for the original idea which sparked this research; to Donald W. Russell, chairman of her doctoral committee for his faith and patient guidance; to Dale Brubaker, Harriet J. Kupferer and R. Fritz Mengert for their encouragement and constructive criticism; to Elizabeth Bowles for her help in correcting the manuscript; and to both Egon Weiss and his staff at the United States Military Academy Library and Elfrieda Lang and her staff at the Lilly Library of Indiana University for their generous assistance in locating materials.

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CHAPTER I

INTRODUCTION

The versatility of Benjamin Franklin is overpowering. He was a man of many roles: printer, postmaster, scientist, philosopher, economist, statesman, general, and educator. This versatility has caused a diffusion of attention to Franklin's accomplishments. As one consequence, educational historians may have overlooked many of Franklin's notable contributions to education and few have attempted a thorough coverage of his activities and influence.

Most educational historians have credited Franklin with some contribution to the development of educational thought; yet the wide range of his educational activities and influence has been rarely mentioned. For example, Harry G. Good and Adolphe E. Meyer have acknowledged Franklin's leadership in establishing (1) the Junto (1727), a discussion club formed for mutual self-improvement where members met once a week to discuss questions on morals, politics, and natural philosophy; (2) the Library Company of Philadelphia (1731), the first subscription library in North America; and (3) the American Philosophical Society (1743), a scientific society, "for the promotion of useful knowledge among the British plantations in America," which

numbered among its members the most famous scientists of the last two hundred years.¹ In addition, historians have related Franklin's efforts on behalf of the Philadelphia Academy, later to become the University of Pennsylvania. In 1749, Franklin published his Proposals Relating to the Education of Youth in Pennsylvania, in which he advocated instruction in English, mathematics, science, and history, not the standard fare of the Latin grammar schools or colleges of that time.

Robert Ulich included a chapter on Franklin in his History of Educational Thought. In addition to those contributions already mentioned, Ulich took into account Poor Richard's Almanac, which he considered "one of the greatest educational forces in America" through its teaching of practical morality.² Ulich also hinted that Franklin's importance may lie in the example that he provided a young and growing nation--an example of self-education and improvement--that he carried on tirelessly.

Two texts and one unpublished dissertation attempted to combine the wide range of Franklin's educational views and activities. The first, a text

¹Harry G. Good, A History of American Education (New York: The Macmillan Company, 1962), pp. 72-77 and 425; Adolphe E. Meyer, An Educational History of the American People (New York: McGraw-Hill Book Company, 1967), pp. 110-115.

²Robert Ulich, History of Educational Thought (New York: American Book Company, 1945), p. 227.

by Thomas Woody, appeared in 1931.³ Leaning heavily on Franklin's own writings, but supplying a running commentary, Woody described Franklin's formal and informal educational activities. Woody, along with his better known activities, included those lesser known, such as his work to establish English schools among the German population of Pennsylvania, his proposal to reform spelling which he communicated to Noah Webster, his ideas on education for women, his attacks on the onesidedness of the education of the day, and his plans for education of orphans and free blacks. This volume was the most comprehensive treatment of Franklin's educational ideas to that date and included most of Franklin's own writings on education.

An unpublished dissertation in 1957, "Benjamin Franklin as an Educator," attempted "to present a reasonably complete picture of all Franklin's educational activities and ideas."⁴ M. Roberta Warf Keiter incorporated several areas previously overlooked or given short notice that must be included in any evaluation of Franklin as an educator. One such area was that of Postmaster General. Franklin organized and improved the colonial post office system, in effect encouraging communication and tying the disparate colonies together as no other service did at that time. Also,

³Thomas Woody (ed.), Educational Views of Benjamin Franklin (New York: McGraw-Hill Book Company, 1931).

⁴M. Roberta Warf Keiter, "Benjamin Franklin as an Educator" (unpublished dissertation, The University of Maryland, 1957), p. 9.

Franklin as a scientist personally contributed to the increase of knowledge through his own observations and hypotheses; he encouraged others in scientific ventures, promoted societies to discuss and share scientific information, and encouraged the publication of scientific works. Finally, Keiter discussed Franklin as a printer, publisher, and editor. In 1729, Franklin began publication of The Pennsylvania Gazette, which continued publication until 1815. As editor, he rewrote foreign and domestic news, wrote letters to the editor which he answered, added humor through aphorisms and quips, and greatly increased advertisements. In 1732, he began publication of Poor Richard's Almanac which preached morality, thrift, industry, and virtue. For a short time in 1741, he published a magazine. In addition to training printers, he financially assisted printers to establish themselves in other states and to begin newspapers. Bernard Bailyn has suggested that printers were only second in importance to clergy as leaders in education during the colonial period.⁵

To date, Keiter's analysis of Franklin's educational ideas and influence has been the most comprehensive.

In 1962, as a part of a series on education in general, edited by Lawrence Cremin, a text entitled Benjamin Franklin on Education was

⁵Bernard Bailyn, Education in the Forming of American Society (Chapel Hill, N. C.: University of North Carolina Press, 1960), p. 93.

published.⁶ Edited by John Hardin Best, this edition contained more of Franklin's own writings than Woody's text, but it did not appreciably add to an understanding of Franklin's importance to education.

As a result of the writer's investigation of Franklin's educational activities, it does not appear that the full importance that Franklin deserves in educational history has been bestowed upon him. Probably the reasons why this has not been adequately done are his versatility, which makes this an enormous project, and the more dramatic nature of many of his other accomplishments. However, it has not been this writer's intention to attempt another full analysis of Franklin's educational activities. Instead, one facet of his purported influence has been pursued and the writer thus hopes to add still another dimension to his educational portrait.

I. THE PROBLEM

The purpose of this study has not been to repeat the educational influences already ascribed to Franklin but to suggest a new area of possible influence that previously had not been explored. In a personal letter to the writer, Thomas Fleming, a recent biographer of Franklin, suggested a

⁶John Hardin Best (ed.), Benjamin Franklin on Education (New York: Teachers College Press, 1962).

possible connection between Franklin and the United States Military Academy at West Point through Franklin's grandnephew, Jonathan Williams, the Academy's first superintendent:

I also think there is a connection between Franklin and the later educational history of the United States in a most unlikely place -- The U. S. Military Academy at West Point. . . . Williams spent a great deal of time with Franklin in France. After the war he became a distinguished engineer. He was chosen for his post by Thomas Jefferson, who, as you know, also had strong ideas about education. I think it would be most interesting to explore and compare Franklin's original educational ideas and the curriculum set up at West Point. It certainly has many similarities to Franklin's original plan. Classics were totally ignored, and the emphasis was on science, mathematics, and allied studies. There were, of course, obvious vocational reasons for this curriculum. But these, I think, are only on the surface. West Point's education far transcended what a professional soldier, even an artillerist, needed to know. The school was soon graduating many more people than the army could use. The astonishing number of West Pointers who became professors of mathematics, engineering, chemistry, and the other sciences in American colleges, and a direct link between West Point and the creation of our first engineering schools make me wonder if Franklin, with the help of Thomas Jefferson and Jonathan Williams, did not make an end run on the classicists of his era, and smuggle science into American education under the guise of military necessity.⁷

The scope and possible importance of this connection intrigued the writer.

A preliminary investigation appeared to corroborate Thomas Fleming's suggestion. The Davis commission summarized the value of the United States Military Academy in 1860 by stating:

⁷See Appendix A for the full text of this letter.

Nearly all the great public works of the country, the river and harbor works, the lighthouses, and even the public buildings, have been directed by its graduates; they were the pioneers in the construction of railroads, and among the teachers of that art; and the great scientific works of the government have been chiefly conducted by them.⁸

In addition, it is true that many Academy graduates who did not become civil engineers themselves became teachers of civil engineering. West Point's texts were used at Rensselaer Polytechnic Institute; Academy graduates were among the first teachers at Lawrence Scientific School in Harvard and Sheffield Scientific School at Yale. Generally, West Point was conceded to be more of a civil engineering school than a military academy.⁹

West Point's development as a school of civil engineering with a heavy emphasis on experimental and applied science was consistent with Franklin's views on both science and education. Whether speaking of philosophical societies or academies for the education of youth, Franklin sought to promote the most "useful" kinds of knowledge. Continually Franklin attempted to apply the results of his scientific investigations to improvements that would benefit mankind.

In addition, Franklin himself was a promotor of many public works, such as the Pennsylvania Hospital, the first fire company in Philadelphia,

⁸Stephen E. Ambrose, Duty, Honor, Country, A History of West Point (Baltimore: Johns Hopkins Press, 1966), pp. 145-146.

⁹Ibid., pp. 123-124.

and cleaning, paving, and lighting the streets of Philadelphia. It is most likely that he would have looked with approval on the practicality of the West Point curriculum with its scientific emphasis.

It has been the purpose of this study to investigate this relationship. Therefore, this study has attempted:

1. To describe the educational views of Benjamin Franklin. It is important to understand the value that Franklin placed on education for the individual's adaptation and success in society; his opinion that education was vital to a growing and expanding country to meet its needs; and his optimism that society may improve itself by making life easier and more comfortable for its members.

2. To analyze Franklin's proposals for formal education, describing their uniqueness, and the extent to which they were carried out during his lifetime. In his "Observations Relative to the Intentions of the Original Founders of the Academy at Philadelphia, June 1789," Franklin detailed the partiality shown to the Latin school in favor of the English school and the decline in importance, scope, and academic credibility of the latter.

3. To probe the relationship between Jonathan Williams and Benjamin Franklin. Jonathan Williams, Franklin's grandnephew, spent approximately ten years abroad with Franklin, returning to the states with him in 1785. Sharing Franklin's interest in science, in 1799 Williams published a treatise entitled Thermometrical Navigation, the results of experiments that he had

undertaken with Franklin.¹⁰ "Thomas Jefferson thought that Williams resembled Franklin in many points of character and mind, for he was interested in experiment and theory and their practical application to everyday life."¹¹ Impressed by Williams' scientific knowledge, Jefferson appointed Williams Superintendent of the Military Academy at West Point in 1801.

4. To describe the part played by Jonathan Williams in the early development of the United States Military Academy at West Point. In 1802, Williams established the United States Military Philosophical Society to promote military science. Its membership included the faculty and cadets of the Academy along with many of the most famous men in the United States, e.g., Thomas Jefferson, De Witt Clinton, Robert Fulton, and Eli Whitney.¹² In a report to Thomas Jefferson in 1808, Williams recommended expansion of the Academy's facilities, staff, and corps of cadets. He also recommended a broader curriculum stressing subjects such as natural and experimental philosophy in all its branches, mathematics, astronomy, geography, navigation, military science, drawing, French, and German.¹³

¹⁰Mildred E. Lombard, "Jonathan Williams," Dictionary of American Biography (New York: Charles Scribner's Sons, 1936), Vol. XX, pp. 280-282.

¹¹Sidney Forman, West Point (New York: Columbia University Press, 1950), p. 23.

¹²Ibid., p. 28.

¹³Annals of Congress, 10th Congress, 1st Session, 1807-1808, Part 2, pp. 2808-2812.

5. To ascertain Franklin's influence if any on Jonathan Williams and the later development of the United States Military Academy. There are inherent difficulties in any historical study of establishing influence beyond a reasonable doubt. Any conclusions will at best be probabilities; however, the connection seems worthy of consideration and may suggest new areas for further study.

For the purposes of this study, the writer has limited the analysis of Franklin to his educational views as previously mentioned and to his connection with Jonathan Williams. Williams has been explored from any angle that pertains to either Franklin or the United States Military Academy.

II. IMPORTANCE OF THE STUDY

This study examined three historical areas that to date either had been examined cursorily or not at all. First, Williams' long friendship with Franklin, which is only alluded to in the literature, was investigated together with their apparent similarity with respect to scientific inquiries. Secondly, Williams' contributions towards the development of the United States Military Academy were assessed. Generally, biographers of the Military Academy have credited Sylvanus Thayer, the Academy's third superintendent, with its direction and organization. Williams' role has largely been overlooked. This study has described Williams' contributions to the development of the Military Academy and secured for him a place in the

history of educational thought. Finally, it is the only study to date that has investigated the similarity between Franklin's ideas on education and the curriculum and development of the United States Military Academy.

III. SOURCES OF THE DATA

Franklin left behind a wide legacy of biographical data. This material includes an autobiography, correspondence, journals, ledgers, almanacs, manuscripts, newspapers, magazines, and pamphlets. The Library of the American Philosophical Society at Philadelphia contains the principal collection of Franklin's works and has attempted to complete its collection by obtaining copies of manuscripts held at other sources.

Much of the Franklin material has been published. A complete edition of Franklin's papers, The Papers of Benjamin Franklin (1959-) is now being edited by Leonard W. Labaree and J. Whitfield Bell under the sponsorship of the American Philosophical Society and Yale University. When completed, this may supersede the standard work on Franklin for many years, The Writings of Benjamin Franklin (1905-07), in ten volumes edited by Albert Henry Smythe. The authoritative edition of Franklin's autobiography is that edited by Max Farrand (1949). Several excellent biographies of Franklin have appeared. An older study, but still viable, is James Parton's Life and Times of Benjamin Franklin, two volumes (1864). A later one, most readable, is Carl Van Doren's Benjamin Franklin (1938). A new biography

edited by Thomas Fleming, Benjamin Franklin, A Biography in His Own Words (1972), in two volumes, has just appeared. Most of the material related to Franklin's educational views has been published in either Thomas Woody's Educational Views of Benjamin Franklin (1931) or John Hardin Best's Benjamin Franklin on Education (1962).

The papers of Jonathan Williams, while not quite as extensive as those of Franklin, are numerous. Only occasional excerpts from letters have been published. The primary collection of Williams' papers is held at the Lilly Library of Indiana University. These papers consist of letters, journals, account books, drawings, and scientific notes. The bulk of the manuscripts in this collection falls after 1800, and thus concerns the period during which Williams was superintendent of the Military Academy. During this period Williams was a meticulous record keeper and the collection contains innumerable copies of his letters.

An adjunct collection of Williams' papers is contained within the Franklin Papers at Yale University Library. In addition, both the libraries of the American Philosophical Society and the United States Military Academy at West Point hold selected papers.

IV. PROCEDURE

Since most of Franklin's works concerning education have been published, these have provided the basis from which Franklin's educational views

have been described. The writer has used the new collection of Franklin's works, The Papers of Benjamin Franklin, when possible. Since this collection is incomplete and many pertinent papers needed to be consulted from a later period, Albert Henry Smythe's The Writings of Benjamin Franklin has been heavily relied upon also. All autobiographical material has been taken from Max Farrand's edition.

To describe the relationship between Franklin and Jonathan Williams and between Williams and the Military Academy, unpublished papers have been consulted. The writer spent a week at the United States Military Academy's Library examining their manuscript collection from the period of Williams' tenure and a week at the Lilly Library examining the Williams' Papers. In addition, the Records of the Secretary of War, Letters Sent and Received, for the period 1800-1812, were examined as they pertained to the Military Academy. The Records of the Secretary of War have been micro-filmed by the National Archives and Records Service and were studied through an interlibrary loan. Innumerable secondary sources, particularly those that predated 1900, have been obtained on interlibrary loans for the writer by the Jackson Library of The University of North Carolina at Greensboro.

In addition to those sources already mentioned, the writer corresponded with Whitfield J. Bell, Jr., Librarian of the American Philosophical Society at Philadelphia; Dorothy W. Bridgwater, Assistant Librarian, Franklin Collection at Yale University Library, New Haven; and Edgar Denton III,

of the Royal Military College of Canada, Kingston, Ontario, whose doctoral dissertation covered the formative years of the United States Military Academy.

V. OUTLINE OF THE DISSERTATION

Chapter II describes the educational views of Benjamin Franklin emphasizing Franklin's departure from the traditional classical curriculum of the seventeenth and eighteenth centuries. Chapter III probes the relationship between Benjamin Franklin and Jonathan Williams. It examines the years they spent together and discusses their similarity with respect to science. Chapter IV analyzes the relationship between Jonathan Williams and the United States Military Academy. Chapter V summarizes and evaluates the possible connection between Franklin, Williams, and the development of the United States Military Academy.

CHAPTER II

THE EDUCATIONAL PROPOSALS AND PHILOSOPHY

OF BENJAMIN FRANKLIN

Benjamin Franklin recognized that existing educational institutions and traditions could no longer prepare youth for the rapidly changing and secularized society of his and succeeding generations. The old world classical traditions could not meet the demands of the new world's environment. Franklin fashioned an institution that was a direct response to this environment--one that would equip youth for the growing number of middle class occupations and professions. Thus he became the progenitor of the utilitarian¹ trend in American education. Franklin's proposal for a formal educational institution of this nature was not realized during his century. However, during the nineteenth century the rapid proliferation of academies, high schools, and colleges of a practical or vocational nature, of which the United States Military Academy was one, shows that Franklin correctly

¹The term utilitarian is used in the sense of useful and practical, not wholly devoid of aesthetic elements but with aesthetics subordinated to practicality.

anticipated the future trend in American education. What kind of background and education gave Franklin this ability to transcend custom and to foresee the direction that education was to take in American society?²

Benjamin Franklin was born to Josiah and Abiah Folger Franklin in Boston on January 6, 1706, the fifteenth of seventeen children and the youngest son of the youngest son for five generations.³ He recalled in his Autobiography that he must have learned to read when very young since he did not remember when he could not read. Perhaps as a result of this early inclination toward reading, his father decided to devote him to the service of the church. Accordingly, at the age of eight, Benjamin was entered in the Boston Grammar School where he remained for less than a year. His father, burdened with the expense of a large family and considering "the little encouragement that line of life afforded to those educated for it,"⁴ transferred him to George Brownell's school for writing and arithmetic. Here Benjamin soon learned to write well but failed in arithmetic. At ten, he left school and entered his father's business--that of a tallow chandler and soap boiler.

²It is not the writer's intention to present a comprehensive portrait of Franklin since to do justice to him would require a lengthy treatment. In addition, many excellent biographies are available. The writer hopes simply to set the stage for an understanding of Franklin's outlook toward life and the development of his educational ideas.

³Max Farrand (ed.), The Autobiography of Benjamin Franklin (Alhambra, California: C. F. Braun and Company, 1964). All biographic material is taken from this source unless otherwise noted.

⁴Ibid., p. 11.

Benjamin's strong dislike for his father's trade coupled with his inclination to go to sea encouraged his father to seek another trade for the boy. After some exploration, Benjamin's fondness for books and reading led his father to apprentice him to his older brother, James, a printer. This was accomplished when Benjamin was twelve. As an apprentice in the printing trade, Benjamin came in contact with the apprentices of booksellers from whom he borrowed many books:

Often I sat up in my room reading the greatest part of the night, when the book was borrowed in the evening and to be returned early in the morning, lest it should be found missing or wanted.⁵

Young Franklin was fond of disputing and arguing with his friend, John Collins, whom he felt often defeated him by the fluency of his words rather than by the strength of his reasons. As a result, he began to put his arguments into writing. His father happened to see these papers and pointed out that:

. . . though I had the advantage of my antagonist in correct spelling and pointing (which I owed to the printing house) I fell far short in elegance of expression, in method, and in perspicuity--of which he convinced me by several instances. . . . [I] determined to endeavour to improve my style.⁶

At this time, an old copy of Addison's Spectator fell into Franklin's hands; thinking the style excellent, he decided to imitate it. Making notes of

⁵Ibid., p. 16.

⁶Ibid., p. 18.

the ideas in each sentence, he laid them aside for several days, and then attempted to rewrite the thoughts using his own words. He then compared his style with the original, discovered his faults, and corrected them.

Ashamed of his ignorance in arithmetic, at sixteen he "took Cooker's book of arithmetic, and went through the whole by myself with the greatest of ease."⁷ Some volumes which Franklin poured over at this early age and which impressed him enough to mention years later when writing his Auto-biography were Bunyan's works, R. Burton's historical collections, Plutarch's Lives, Defoe's An Essay on Projects, Cotton Mather's Essays to Do Good, Locke's On Human Understanding, and Messrs. du Port Royal's The Art of Thinking. He also recalled that some works intending to refute deism by Shaftsbury and Collins fell into his hands but:

It happened that they wrought an effect on me quite contrary to what was intended by them, for the arguments of the deists which were quoted to be refuted appeared to me much stronger than the refutations. In short, I soon became a thorough deist.⁸

In addition, after encountering Xenophon's Memorable Things of Socrates [Memorabilia], he adopted the Socratic method of discourse for several years, finding that he became adept at artfully entangling his adversaries in difficulties from which they could not extricate themselves. Gradually,

⁷Ibid., p. 20.

⁸Ibid., p. 70.

however, he dropped this mode of discourse "retaining only the habit of expressing myself in terms of modest diffidence"⁹ for "as the chief ends of conversation are to inform, or to be informed, to please or to persuade"¹⁰ a positive manner will defeat itself.

In fact, if you wish to instruct others, a positive, dogmatical manner in advancing your sentiments may provoke contradiction and prevent candid attention. If you desire instruction and improvement from the knowledge of others, you should not at the same time express your self as firmly fixed in your present opinions; modest and sensible men, who do not love disputation, will probably leave you undisturbed in the possession of your error.¹¹

Franklin continued this modest habit of expressing himself throughout his life. In fact, this philosophy of humility was carried one step further when later in initiating public projects he would not propose the scheme as his but as emanating from a "number of friends."

The objections and reluctances I met with in soliciting the subscriptions [for the library] made me soon feel the impropriety of presenting one's self as the proposer of any useful project that might be supposed to raise one's reputation in the smallest degree above that of one's neighbors when one has need of their assistance to accomplish that project. I therefore put myself as much as I could out of sight, and stated it as a scheme of a "number of friends" who had requested me to go about and propose it to such as they thought lovers of reading. In this way my affair went on more smoothly, and I ever after practiced it on such occasions, and from my frequent successes can heartily recommend it.¹²

⁹Ibid., p. 21.

¹⁰Ibid., p. 22.

¹¹Ibid.

¹²Ibid., p. 97.

Around 1720 Franklin's borthor, James, began to publish a newspaper, The New England Courant. Suspecting that his brother would not publish anything that came from his hands, Franklin wrote a series of letters to the paper under the pseudonym of Silence Dogood.

Several of Franklin's later ideas on education are foreshadowed in these letters. In one letter he satirized Harvard and the emphasis placed on learning Latin, Greek, and Hebrew instead of English.¹³ He then considered the outcome of these students. Most, he observed, go on to the study of theology but:

Some I perceiv'd took to Merchandizing, others to Travelling, some to one Thing, some to another, and some to Nothing; and many of them from henceforth, for want of Patrimony, liv'd as poor as Church Mice, being unable to dig, and asham'd to beg, and to live by their Wits it was impossible.¹⁴

In a succeeding letter, Franklin continued an argument begun with his youthful friend, John Collins, on the advisability of educating women.¹⁵

Quoting from Defoe's An Essay on Projects, he argued,

I have (says he) often thought of it as one of the most barbarous Customs in the World, considering us as a civiliz'd and Christian Country, that we deny the Advantages of Learning to

¹³Leonard Labaree and J. Whitfield Bell, Jr. (eds.), The Papers of Benjamin Franklin (New Haven: Yale University Press, 1959-), Vol. I, pp. 14-18.

¹⁴Ibid., p. 17.

¹⁵Ibid., pp. 18-21.

Women. We reproach the Sex every day with Folly and Impertinence, while I am confident, had they the Advantages of Education equal to us, they would be guilty of less than our selves.¹⁶

After repeated disagreements with his brother, Franklin fled Boston, thus breaking his indenture which he later described as the first "errata" of his life. Finding no employment as a printer available in New York, but hearing that there may be an opportunity in Philadelphia, he continued to that city arriving in October of 1723 at the age of seventeen. He soon found employment at the printing shop of Samuel Keimer, where he demonstrated his ability and industry.

Franklin's first trip to England in 1724, while a result of what would have been a cruel hoax on a lesser man, contributed not only to his skill as a printer but to his knowledge in general. In addition, he made the acquaintance of several learned men that continued throughout his lifetime. The trip came about through Franklin's acquaintance with the Governor of Pennsylvania, Sir William Keith, whom he had met through his brother-in-law, Robert Homes. Keith proposed setting Franklin up in the printing business and sent him off to England to purchase the necessary supplies, all the while promising Franklin letters of credit upon his arrival. Once in London, Franklin discovered that Keith had not sent the letters of credit that he had promised and in fact Keith had no credit to extend. In an effort to obtain the good will

¹⁶Ibid., p. 20.

of others, Keith frequently made promises that he could not fulfill. Making the best of the circumstances, Franklin found employment in two of London's most famous printing houses, Palmer's and later Watt's.

Before leaving for London, Franklin had courted Deborah Read. Knowing that he was about to embark upon a long voyage, they had postponed their marriage until his return. Once in London, Franklin wrote to her that he was not likely to return for some time, which he later described as one of his greatest "errata" and one that he would correct if he could relive his life.

After eighteen months in London, Franklin returned to Philadelphia in the employ of a Quaker merchant, Mr. Denham, who intended introducing Franklin to the mercantile business. However, Denham died unexpectedly, and Franklin, finding no other work available, returned to the employ of Samuel Keimer, whose business was in chaos. Gradually, as Franklin put Keimer's printing shop in order and trained his apprentices, arguments arose more frequently between them. Then one of Keimer's apprentices, Hugh Meredith, approached Franklin about entering into a partnership--Franklin supplying the skill and Meredith's father the capital. This was accomplished in 1728. In 1730, Franklin, aided financially by two friends, bought out Meredith, and thus at the age of twenty-four he became the sole owner of a printing house including a newspaper, The Pennsylvania Gazette, which he and Meredith had purchased from Keimer in 1729.¹⁷

¹⁷Labaree, op. cit., Vol. I, p. 175; Carl Becker, "Benjamin Franklin," Dictionary of American Biography (New York: Charles Scribner's Sons. 1931). Vol. VI. n. 586.

In 1732, Franklin began publication of Poor Richard's Almanac which was immediately successful and continued for twenty-five years. Through aphorisms, he taught virtue, industry, and thrift, and in time his name became a household word throughout the colonies.

Business prospered and Franklin was careful to present at all times the appearance of industry and thrift. He described his efforts in this way:

In order to secure my credit and character as a tradesman, I took care not only to be in reality industrious and frugal, but to avoid all appearances of the contrary. I dressed plain and was seen at no places of idle diversion. I never went out a fishing or shooting; a book, indeed, sometimes debauched me from my work, but that was seldom, snug, and gave no scandal; and to show that I was not above my business, I sometimes brought home the paper I purchased at the stores, thro' the streets on a wheelbarrow.¹⁸

On September 1, 1730, Franklin repaired his greatest "errata" as best he could by taking to wife, Deborah Read. ". . . she proved a good and faithful helpmate," wrote Franklin, "assisted me much by attending the shop; we throve together and ever mutually endeavored to make each other happy."¹⁹

As his business prospered, Franklin's moral development matured. He had rejected formalized religion and become a deist at the age of fifteen. However, on his return from England he reflected upon his conduct towards

¹⁸Farrand, op. cit., p. 82.

¹⁹Ibid., p. 85. .

Miss Read and the conduct of some of his free thinking friends. "I began to suspect," he stated, "that this doctrine, tho' it might be true, was not very useful."²⁰ He continued:

I grew convinced that truth, sincerity and integrity in dealings between man and man were of the utmost importance to the felicity of life, and I formed written resolutions (which still remain in my Journal book) to practice them ever while I lived. Revelation had indeed no weight with me as such; but I entertained an opinion that tho' certain actions might not be bad because they were forbidden by it, or good because it commanded them, yet probably those actions might be forbidden because they were bad for us or commanded because they were beneficial to us, in their own natures, all the circumstances of things considered.²¹

At this time he also drew up a private liturgy that expressed his religious beliefs and became a prayer for his own use.²² In essence, Franklin's beliefs were these: that there is one God, who governs all and should be worshipped; that the most acceptable service to God is to do good to man; and that the soul is immortal, and God will reward virtue and punish vice, either here or hereafter.

Franklin also decided to make himself the object of an experiment to arrive at moral perfection. Drawing up a list of thirteen virtues--temperance, silence, order, resolution, frugality, industry, sincerity, justice, moderation, cleanliness, tranquility, chastity, and humility--he planned to spend a week

²⁰Ibid., pp. 70-71.

²¹Ibid., p. 71.

²²Labaree, op. cit., Vol. I, pp. 101-109.

concentrating on improving himself in each one. He kept a notebook in which he gave himself a little black spot for every fault he found at the end of each day. His intention was to spend a week on each virtue, and in this way to go through the whole list once every thirteen weeks, and the course four times a year. "I was surprized to find myself so much fuller of faults than I had imagined," he noted, "but I had the satisfaction of seeing them diminish."²³

Franklin had a deep seated desire to improve himself and others, which showed itself in various forms. In the fall of 1727, he formed a club from among his acquaintances for mutual improvement which was called the Junto. Meeting once a week, members discussed morals, politics, and natural philosophy. However, the Junto was more than a society for sharing intellectual ideas. It took on many of the attributes of today's fraternal organizations. The members assisted one another in business, both financially and through patronage, defended one another's characters if necessary, and became a nucleus from which projects that would benefit the city were launched.²⁴

Franklin's first public project was the Library Company of Philadelphia, which he organized in July of 1731. Franklin drafted the rules and articles

²³Farrand, op. cit., p. 107.

²⁴Labaree, op. cit., Vol. I, pp. 255-263. For example, it was two Junto friends who lent Franklin the money to buy out Meredith and go into business for himself.

of agreement and obtained the original fifty subscribers.²⁵ "The institution," Franklin wrote, "soon manifested its utility, and was imitated by other towns and in other provinces. . . ."²⁶ The Library was a boon to Franklin himself, as well as to others, for he stated:

This Library afforded me the means of improvement by constant study, for which I set apart an hour or two each day, and thus repaired in some degree the loss of the learned education my father once intended for me.²⁷

Franklin began studying modern languages in 1733, progressing quickly through French, Italian, and then Spanish. Afterwards, glancing through a Latin Testament, he was surprised at how much of it he could understand although his introduction to Latin as a youth had been brief. Applying himself to the study of Latin, he now found it quite easy. From this experience he concluded that perhaps there was an error in the present mode of teaching languages which proceeded from the Latin to French, Italian, and Spanish. Perhaps, he wrote, it would be better to proceed from the modern languages to Latin. Not only would the progression be easier but those who quit before arriving at a knowledge of Latin would "have acquired another tongue or two that being in modern use might be serviceable to them in common life."²⁸

²⁵Labaree, op. cit., Vol. I, p. 208.

²⁶Farrand, op. cit., p. 96.

²⁷Ibid., p. 97.

²⁸Ibid., p. 122.

The first suggestion for a philosophical society came from John Bartram, the botanist, but it was Franklin's organizing ability and active support that led to its actual establishment.²⁹ In 1743, Franklin wrote a proposal embodying both Bartram's ideas and his own for a society to promote useful knowledge among the British Plantations in America to be called The American Philosophical Society.³⁰ The society was to become a clearing-house for scientific knowledge. In addition, new knowledge would be encouraged through the monthly meetings, the papers communicated to the society by members on their own observations and experiments, and quarterly abstracts sent to members of all valuable communications. The proposed subjects of correspondence included all branches of natural philosophy with a particular emphasis on the usefulness and practical application of all discoveries and observations. Though slow to take root, the society became a major repository for scientific knowledge and continues to this day to promote useful knowledge.

Franklin's zeal for improvement led him to initiate many projects for the benefit of his city. At his suggestion the first fire company in Philadelphia was formed. Philadelphia became one of the most protected cities in America. Regretting that there was no militia nor provision for defense of

²⁹Labaree, op. cit., Vol. II, pp. 378-379.

³⁰Ibid., pp. 380-383.

the city, in 1743 Franklin wrote a pamphlet, Plain Truth, in which he strongly urged voluntary associations for this purpose. "The pamphlet had a sudden and surprizing effect,"³¹ and Franklin was called upon to draft a plan of association which was immediately put into operation. Voluntary companies and regiments were formed and a battery of cannon were erected for the defense of the city.

Franklin also contributed his efforts to helping his friend, Dr. Thomas Bond, establish a hospital in Philadelphia in 1751. He was instrumental in establishing a city police, and having the streets of Philadelphia paved, lighted, and cleaned. When he became deputy postmaster-general for the colonies, he put the postal service on its feet financially for the first time and increased the efficiency and frequency of the mail deliveries.³²

Besides his business and philanthropic interests, Franklin still found time to pursue his scientific studies³³ that had interested him from the days of his youth. While in England in 1724, he had made the acquaintances of several London scientists, among them Sir Hans Sloane and Dr. Henry Pemberton. Pemberton was then preparing the third edition of Sir Isaac Newton's Principia and promised to introduce Franklin to Newton; however,

³¹Farrand, op. cit., p. 135.

³²Becker, op. cit., p. 588.

³³The term science as used by the writer refers to the physical and biological sciences which include astronomy, chemistry, geology, meteorology, physics, botany, zoology, and paleontology. In the eighteenth century the term natural philosophy had the same implications.

the proposed meeting never materialized, much to Franklin's disappointment.³⁴

Franklin made his first recorded scientific observations during his return trip from England. In his journal, he carefully noted his observations of the weather conditions, the appearance of the sea water, and the specimens of fish and sea weed brought abroad.³⁵

In 1742, he invented an open stove that heated rooms more efficiently at less expense. The Governor of Pennsylvania was so pleased with this invention that he offered Franklin a patent. Franklin declined, stating:

. . . that as we enjoy great advantages from the inventions of others, we should be glad of an opportunity to serve others by any invention of ours, and this we should do fully and generously.³⁶

Franklin apparently saw some electrical experiments in Boston in the spring of 1743 performed by Dr. Archibald Spenser. When Dr. Spenser came to Philadelphia in 1744, Franklin purchased all his apparatus.³⁷ However, his full attention was not drawn to the subject until in 1745 Peter Collison sent to the directors of the Library Company "a present of a glass tube, with some account of the use of it in making such [electrical] experiments."³⁸ Franklin was soon totally engrossed in this new study.

³⁴I. Bernard Cohen, Franklin and Newton (Baltimore, Maryland: J. H. Furst Company, 1956), pp. 206-208.

³⁵Labaree, op. cit., Vol. I, pp. 72-79.

³⁶Farrand, op. cit., p. 143. Italics are Franklin's.

³⁷Cohen, op. cit., p. 432.

³⁸Farrand, op. cit., p. 189.

Franklin's business had prospered and by 1748 he was able to turn the daily operation of his business affairs over to his partner, David Hall, thus allowing himself time to pursue his scientific studies. ". . . I flattered myself that, by the sufficient tho' moderate fortune I had acquired, I had secured leisure during the rest of my life for philosophical studies and amusements" ³⁹ While Franklin's leisure lasted little more than six years and was periodically interrupted by numerous public projects, it was during these years that his contributions on electricity were made and his fame as a scientist assured. Franklin's contribution to the field of electricity was more profound than the often cited kite experiment in which he proved that lightning and electricity were one and the same.

Franklin formulated the first unified theory of electricity--the single fluid theory--bringing together all the known data of the time. He introduced the terms plus, minus, positive, negative, battery, and charged into the language of electricity. His description of the action of the condensor stands to this day. In addition, his observations on pointed conductors coupled with the discovery of the function of insulation and grounding in charged bodies led him to one of his most important inventions--the lightning rod. ⁴⁰

³⁹Ibid., p. 147.

⁴⁰I. Bernard Cohen, "How Practical Was Benjamin Franklin's Science," Pennsylvania Magazine, History and Biography, Vol. LXIX, pp. 290-291; Becker, op. cit., pp. 588-589.

In all, ten editions of his work on electricity were published before the American Revolution--five in English, three in French, and one each in German and Italian. As a result of his work in electricity, he was granted a Master of Arts degree by both Harvard and Yale in 1753 and by William and Mary in 1756. The Royal Society awarded him the Copley gold medal in 1753 and several years later elected him a member. In 1759, the University of St. Andrews in Scotland conferred on him the degree of Doctor of Laws, and Oxford followed in 1762 by granting him the degree of Doctor of Civil Laws.⁴¹

During the eighteenth century, Franklin's fame rested upon his leadership in the world of science. Franklin was hailed as an American Newton. This renown was in large measure responsible for his success in international statesmanship.⁴² It is interesting to note that two hundred years later he is so little remembered as a scientist that there is no full length text devoted to his research in all branches of science.⁴³

Franklin has been labeled an "applied scientist" since many of his observations and investigations led him to practical discoveries that would enhance man's material condition. It is true that many of Franklin's

⁴¹Cohen, Franklin and Newton, op. cit., pp. 36-37; Becker, op. cit., p. 589.

⁴²Cohen, Franklin and Newton, op. cit., pp. 36-38.

⁴³Ibid., p. 27.

inventions were of a practical nature, i.e., the Franklin stove, the lightning rod, bifocals, the flexible catheter, and the "long arm," a device to remove books or objects from high shelves. However, Franklin was no inventor or gadgeteer. His research in electricity and other branches of science was pursued for no practical reasons. He was insatiably curious about all natural phenomena and experimented and wrote widely upon all branches of natural philosophy. Most of his writings on science took the form of letters to friends. A sampling of the topics he covered might include the origin and cause of northeast storms,⁴⁴ observations on the phenomenon of light including conjectures on the origin of colours,⁴⁵ description of a whirlwind,⁴⁶ contagion as the cause of the common cold,⁴⁷ the origin of springs in mountains,⁴⁸ and conjectures concerning the formation of the inner core of the earth.⁴⁹

⁴⁴Franklin to Jared Eliot, February 13, 1749 or 50, Labaree, op. cit., Vol. III, pp. 463-466.

⁴⁵Franklin to Calwallader Colden, April 23, 1752, Albert Henry Smythe, The Writings of Benjamin Franklin (New York: The Macmillan Company, 1907), Vol. III, pp. 82-87.

⁴⁶Franklin to Peter Collison, August 25, 1775, Smythe, ibid., Vol. III, pp. 273-275.

⁴⁷Franklin to Benjamin Rush, July 14, 1773, Smythe, ibid., Vol. VI, pp. 100-101.

⁴⁸Franklin to Jared Eliot, July 16, 1747, Smythe, ibid., Vol. II, pp. 310-315.

⁴⁹Franklin to Abbe Soulavie, September 22, 1782, Smythe, ibid., Vol. VIII, pp. 597-602. A copy of this letter is among the Jonathan Williams' Papers at Lilly Library, Indiana University.

Franklin's sense of the useful and practical did not limit him to pursuing studies that would only produce practical results, but it did keep him continuously alert to the possible applications of any new discovery. Consequently, after performing experiments with different colors of cloth on the snow and determining that dark colors absorb the sun's rays more readily, he turned his mind to the practical applications of this discovery. He stated:

What signifies Philosophy that does not apply to some Use? May we not learn from hence, that Black Clothes are not so fit to wear in a hot Sunny Climate or Season, as white ones; because in such Cloaths the Body is more heated by the Sun when we walk abroad, and are at the same time heated by the Exercise, which double Heat is apt to bring on putrid dangerous Fevers? That Soldiers and Seamen, who must march and labour in the Sun, should in the East or West Indies have an Uniform of white? That Summer Hats, for Men or Women, should be white, as repelling that Heat which gives Headachs to many, and to some the fatal Stroke that the French call the Coup de Soleil? That the Ladies' Summer Hats, however, should be lined with Black, as not reverberating on their Faces those Rays which are reflected upwards from the Earth or Water? That the putting a white Cap of Paper or Linnen within the Crown of a black Hat, as some do, will not keep out the Heat, tho' it would if placed without? That Fruit Walls being black'd may receive so much Heat from the Sun in the Daytime, as to continue warm in some degree thro' the Night, and thereby preserve the Fruit from Frosts, or forward its Growth?--with sundry other particulars of less or greater Importance, that will occur from time to time to attentive Minds?⁵⁰

Here is an example of where Franklin did not begin his experiments looking for something practical--but, once having made his discovery, his mind turned to the many ways in which the new knowledge could be put to use.

⁵⁰Franklin to Mary Stevenson, September 20, 1761, Smythe, ibid., Vol. IV, pp. 115-116.

In summary, Franklin was concerned with both the moral and material progress of man. The many projects that he initiated or to which he lent his support, his numerous writings, and his work in science were directed toward man's spiritual and physical well-being. From the data of his experience in human affairs, he could not express as much hope for man's moral progress as he could for his physical progress. This he expressed dramatically in a visionary letter to a friend.

The rapid Progress true Science now makes, occasions my regretting sometimes that I was born so soon. It is impossible to imagine the Height to which may be carried, in a thousand years, the Power of Man over Matter. We may perhaps learn to deprive large Masses of their Gravity, and give them absolute Levity, for the sake of easy Transport. Agriculture may diminish its Labour and double its Produce; all Diseases may by sure means be prevented or cured, not excepting even that of Old Age, and our Lives lengthened at pleasure even beyond the antediluvian Standard. O that moral Science were in as fair a way of Improvement, that Men would cease to be Wolves to one another, and that human Beings would at length learn what they now improperly call Humanity!⁵¹

It is not surprising that as a result of Franklin's desire for man's moral and material progress, he would at some point in his life direct his attention to the education of youth. In this case, however, he was not content merely to propose and organize. In his Proposals Relating to the Education of Youth in Pennsylvania and his Idea of the English School

⁵¹Franklin to Joseph Priestly, February 8, 1780, Smythe, ibid., Vol. VIII, p. 10.

Sketch'd Out for the Consideration of the Trustees of the Philadelphia Academy, he not only spelled out in great detail what should be the content of this education but the manner in which it should be taught.

But in order to appreciate Franklin's break with tradition and his ability to recognize and meet the new demands brought about by a changing society, one should first be acquainted with the colonial colleges and Franklin's Philadelphia.

The colonial colleges were largely patterned after the English universities. Harvard, founded in 1636, was modeled upon Emanuel at Cambridge and William and Mary, in 1693, after Queens at Oxford.⁵² This similarity was evidenced not only in the curriculum but in many other aspects of the college's organization. The concepts of religious control and the residential pattern that made college a home away from home were borrowed from the English colleges. In addition, the emphasis on teaching as opposed to inquiry, discipline rather than responsibility, students instead of scholars, reflected the patterns set by the English universities.⁵³

But by far the most outstanding similarity lay in the area of curriculum. The colonial college made almost no attempt to adjust the curriculum to the demands of the new country. It practically reproduced the curriculum of the English university.

⁵²Frederick Rudolph, The American College and University (New York: Alfred A. Knopf, 1962), p. 24.

⁵³Ibid., p. 26.

The English university was a product of three distinct social and intellectual forces: the medieval university, the Renaissance, and the Reformation. From the medieval university came logic, rhetoric, ancient mathematics and science, and exercises in academic disputation; from the Renaissance, the Latin and Greek classics; and from the Reformation, Hebrew, Bible studies and Protestant theology.⁵⁴

Latin was the fundamental discipline. It was the language of law, theology and medicine and the key to the ancient classics of Rome. Greek was necessary for an understanding of the contributions of Grecian culture and much of the New Testament literature. Hebrew was the language of the prophets, the key to the Old Testament. As a result, a thorough grasp of Latin and Greek, and to a lesser extent Hebrew, was necessary. Accordingly, the study of these languages formed the core of colonial college curriculum. In varying proportions logic, rhetoric, natural philosophy, metaphysics, ethics, and a smattering of mathematics rounded out the students' four-year course of study.⁵⁵

The preceding curriculum, brought from England and adopted by the colonial colleges, traditionally has been termed classical education. As a result of this classical curriculum the colonial colleges were, like their

⁵⁴H. G. Good, A History of American Education (New York: The Macmillan Company, 1962), p. 60.

⁵⁵Rudolph, op. cit., pp. 25-26.

English counterparts, essentially aristocratic in clientele and purpose. While collegiate study most often led to the professions of theology, law, or medicine, it sometimes provided merely the cultivation necessary for a gentleman of leisure.

Until 1745 knowledge of the Latin and Greek languages was the only requirement for entrance to the colonial colleges. Hence, the secondary school that paved the way to the colonial college offered instruction almost exclusively in reading, writing, and the grammar of Latin and Greek and in some cases Hebrew.⁵⁶ Appropriately, they were called Latin Grammar Schools.

Franklin's Philadelphia was a large and growing port city. Weekly vessels brought immigrants from Europe and other American colonies to make it the fastest growing city in the American colonies. By 1760 it had surpassed all other colonial cities in population. Newcomers were attracted by the religious freedom of Penn's colony and the opportunities for commercial success.⁵⁷ Franklin's was just one of many success stories.⁵⁸ The city contained a wide variety of populations--in religion, heritage, and social class.

⁵⁶Good, op. cit., pp. 56-58.

⁵⁷Edward Potts Cheyney, History of the University of Pennsylvania, 1740-1940 (Philadelphia: University of Pennsylvania Press, 1940), p. 3.

⁵⁸Carl Bridenbaugh, Cities in the Wilderness: The First Century of Urban Life in America, 1625-1742 (New York: Alfred A. Knopf, 1955), p. 338.

As the city grew, social distinctions became more prominent. Social mobility through wealth had characterized the city's earlier days. Yet, while the possibility of accumulating great wealth still existed, money alone no longer constituted automatic entry into the upper classes. More and more the aristocracy stressed inheritance and breeding rather than wealth as the basis for social position. Franklin never considered himself a part of the Philadelphia gentry. The aristocracy were the moneyed and landed, usually professional men or members of the colonial government. The lower class consisted of laborers, seafarers, servants, and slaves.⁵⁹ But there was also a rising middle class of tradesmen and artisans, of which Franklin considered himself a part, who prospered with the city and grew in importance as their numbers increased.⁶⁰

Philadelphia was also a rich city. It prospered under the increasing volume of trade with the mother country, the West Indies, and other colonies. Vast quantities of grain, flour, ship-bread, flax, bar and pig iron, skins and furs were exported to pay for the growing demand of the colonists for manufactured articles and luxuries.⁶¹ Industries supporting shipping flourished. Shipbuilders prospered as well as small armies of artisans and workers who

⁵⁹Ibid., pp. 411-413.

⁶⁰Carl and Jessica Bridenbaugh, Rebels and Gentlemen, Philadelphia in the Age of Franklin (New York: Reynal and Hitchcock, 1942), p. 10.

⁶¹Cheyney, op. cit., p. 5.

prepared goods for export.⁶² A host of small manufacturers came into being, including cooperages, rum distilleries, steel furnaces, and a shop for the manufacture of fire engines. The increasing population contributed to the establishment of a wide variety of retail shops.⁶³

As the wealth and prosperity of the city increased, new opportunities for employment were created. The commercial nature of the city led to a need for large numbers of bookkeepers and accountants. Surveyors were needed for building roads, plotting farms and other tracts of land, and erecting both private and public buildings. The artisans' establishments and retail shops needed "tradesmen" and "mechanics." Sailing vessels required navigators. Daily, the number of middle class occupations increased.⁶⁴

Philadelphia was also a city of culture and refinement. Although it offended the Quakers, dancing was a favorite pastime and the well-to-do had formed a dancing assembly. Music was popular and instruction available on a variety of musical instruments. The city supported two thriving newspapers whose rivalry enlivened much of the city's history. There were

⁶²Bridenbaugh, op. cit., pp. 337-338.

⁶³Carl and Jessica Bridenbaugh, op. cit., pp. 9-10.

⁶⁴Ibid., p. 10; Good, op. cit., p. 67. The surveyor was the forerunner of the engineer in America.

numerous bookstores in addition to Franklin's Library. Philosophical lectures were frequent. One writer contrasted Philadelphia to New York, as Athens to Sparta.⁶⁵

It is somewhat surprising that this large and rich city had not as yet by the mid-eighteenth century made any provision for higher education. However, the ecclesiastical demand for education that had led to the formation of other colonial colleges was lacking. The Quakers, who had been the first settlers, as well as the Baptists and Mennonites, were opposed to a separately educated ministry. In addition, the well-to-do often sent their sons to Europe to be educated.⁶⁶

Means of education, however, were in no way lacking. There existed in the city a large number of private schoolmasters who supplied the practical and vocational knowledge necessary for the growing number of professional and commercial occupations. The most popular courses were those offered in mathematics to meet the needs of the various commercial interests. There were at least 162 private teachers living in the city of Philadelphia during the years 1722 through 1783.⁶⁷ Newspapers abounded with advertisements as the following:

⁶⁵Cheyney, op. cit., pp. 9-12; Carl Bridenbaugh, op. cit., pp. 456-458.

⁶⁶Cheyney, op. cit., p. 13.

⁶⁷Good, op. cit., p. 68.

Mr. Charles Fortesque offers to teach at his home in the alley commonly called Mr. Taylors, the Latin Tongue, English in a Grammatical Manner, Navigation, Surveying, Mensuration, Dialling, Geography, Use of the Globes, the Gentleman's Astronomy, Chronology, Arithmetic, Merchants Accounting, etc. The above to be taught at Night School as well as Day.⁶⁸

Even the ladies were not neglected. They were offered instruction in Latin, French, writing, arithmetic, dancing and sewing.⁶⁹ There were no regulations upon the private schoolmasters. Many made extravagant claims upon their teaching abilities. The chief regulating force was competition.⁷⁰ The number and success of these private schoolmasters must have offered Franklin all the proof he needed that Philadelphia and the rising middle class needed a new type of educational institution to meet the needs of a rapidly changing society.

Regretting that there was no provision for higher education in Philadelphia, Franklin had turned his thoughts to plans for an academy⁷¹ as

⁶⁸Cheyney, op. cit., p. 14. Quoted from The Pennsylvania Gazette, November 24, 1743.

⁶⁹Ibid; Carl Bridenbaugh, op. cit., pp. 447-448.

⁷⁰Good, op. cit., p. 71.

⁷¹The use of the term academy is confusing. It usually suggests a secondary school but even today the United States Military Academy, clearly a college, retains this appellation. Franklin and the other founders had in mind a college as an ultimate plan but began with a higher secondary school. In 1755, the Academy officially did become a college. (Cheyney, op. cit., p. 34, supports the writer's contention that Franklin and the original founders intended a college eventually.) The difficulty in immediately forming a college probably lay in obtaining the good will and support of the Proprietors.

early as 1743. At this time he was not able to secure the services of the person he believed most suitable to superintend the institution.⁷² Thus, he let the matter lie dormant until 1749. Then, returning to his plan, Franklin discussed his ideas with his Junto friends and several important personages whose support he would need. Franklin's original intent was for an English education, one that would exclude the "learned languages," give students a thorough mastery of their own tongue, and prepare them for the growing number of commercial and professional occupations that were daily coming into existence. As he later indicated, he was forced to compromise his original plans in respect to language for the very pragmatic purpose of obtaining support.

. . . In 1749 I was encouraged to hazard another Project, that of a Public Education for our Youth. As in the Scheme of the Library I had provided only for English Books, so in this new Scheme my Ideas went no farther than to procure the Means of a good English Education. A Number of my Friends, to whom I communicated the Proposal, concurr'd with me in these Ideas; but Mr. Allen, Mr. Francis, Mr. Peters, and some other Persons of Wealth and Learning, whose Subscriptions and Countenance we should need, being of Opinion that it ought to include the learned Languages, I submitted my Judgement to theirs, retaining however a strong Prepossession in favour of my first Plan, and resolving to preserve as much of it as I could, and to nourish the English School by every Means in my Power.⁷³

⁷²Farrand, op. cit., p. 134.

⁷³"Observations Relative to the Intentions of the Original Founders of the Academy in Philadelphia," June, 1789. Smythe, op. cit., Vol. X, pp. 9-10.

Although he compromised on the inclusion of the "learned languages," there is no reason to suspect that the rest of the Proposals⁷⁴ published in 1749 is not consistent with Franklin's educational views. In this treatise, Franklin attached numerous footnotes to authorities in education in support of his ideas.⁷⁵ Franklin's avowed intent was to show that although his ideas on education were different from present usage, they had the support of known authorities. It should be remembered that at this time Franklin had not as yet attained that international fame as a scientist that would later lend authority and authenticity to his own ideas.

The Proposals opened with a statement as to the importance of education both to the individual and to the state.

The good Education of Youth has been esteemed by wise Men in all Ages, as the surest Foundation of the Happiness both of private Families and of Commonwealths. Almost all Governments have therefore made it a principal Object of their Attention, to establish and endow with proper Revenues, such Seminaries of Learning, as might supply the succeeding Age with Men qualified to serve the Publick with Honour to themselves, and to their Country.⁷⁶

⁷⁴"Proposals Relating to the Education of Youth in Pennsylvania," Labaree, op. cit., Vol. III, pp. 397-421. The following account of Franklin's educational design was taken from this source.

⁷⁵John Milton; John Locke; David Fordyce who Franklin mistakenly believed was Francis Hutchinson; Obadiah Walker; Charles Rollin; and George Turnbull. Franklin relied most heavily on Locke and Milton.

⁷⁶Labaree, op. cit., Vol. III, p. 399.

So that Pennsylvania might obtain the advantages accruing from an increase in education and knowledge, Franklin proposed that a group of interested persons apply for a charter and form a corporation to erect an academy. The members of the corporation were to play an unusual role. Franklin suggested:

That the members of the Corporation make it their Pleasure, and in some Degree their Business, to visit the Academy often, encourage and countenance the Youth, . . . that they look on the Students as in some Sort their Children, treat them with Familiarity and Affection, and when they have behav'd well, and gone through their Studies, and are to enter the World, zealously unite, and make all the Interest that can be made to establish them⁷⁷

Franklin offered as an explanation for this policy that it would encourage and motivate youth to study. It was strongly reminiscent of the Junto policy in which members assisted one another by whatever means available. Franklin had found that that mutual-help society had been of great benefit to himself in all his projects. It is possible that he saw the students, teachers, alumni, and trustees of the academy as one large fraternal organization offering mutual assistance to one another. Had this policy been carried out to the extent that Franklin suggested, it would certainly have enhanced the desirability of entering this institution since the trustees were the leading men in Philadelphia.

⁷⁷Ibid., p. 400.

Franklin then turned his attention to the physical facilities and equipment that the academy would need. He suggested procuring a house outside of town having a garden or field surrounding it and:

That the House be furnished with a Library (if in the Country, if in the Town, the Town Libraries may serve) with Maps of all Countries, Globes, some mathematical Instruments, an Apparatus for Experiments in Natural Philosophy, and for Mechanics; Prints, of all Kinds, Prospects, Buildings, Machines, etc.⁷⁸

Franklin later gave up the idea of locating the academy outside of town when he realized that it would prevent the trustees from visiting frequently.

The rector was to be "a Man of good Understanding, good Morals, diligent and patient, learn'd in the Languages and Sciences, and a correct pure Speaker and Writer of the English Tongue."⁷⁹ There were to be no religious qualifications for the rector since the academy was to be nonsectarian.

Students were to board together plainly and frugally with care being taken to keep them in health through frequent exercise. Franklin recommended running, leaping, wrestling, and swimming.

As to the content of their education:

. . . it would be well if they could be taught every Thing that is useful, and every Thing that is ornamental: But Art is long, and their Time is short. It is therefore propos'd that they learn those Things that are likely to be most useful and most ornamental, Regard being had to the several Professions for which they are intended.⁸⁰

⁷⁸Ibid., pp. 401-402.

⁷⁹Ibid., p. 402.

⁸⁰Ibid., p. 404.

Here Franklin's sense of usefulness or utilitarianism was clearly evident. Education should be geared to the professions for which one is preparing. Time should be used prudently in preparation for one's career. In many respects the curriculum proposed by Franklin resembled the offerings of the private schoolmasters of the city. However, as one reviews the variety of subjects that Franklin proposed, it becomes evident that it was not narrowly vocational in any sense. It was designed to give youth the background necessary to meet the demands of their new environment.

The suggested curriculum opened by the statement:

All should be taught to write a fair Hand, and swift, as that is useful to All. And with it may be learnt something of Drawing, by Imitation of Prints, and some of the first Principles of Perspective.⁸¹

"Drawing," Franklin noted, "is a kind of Universal Language,"⁸² and one may often express in a few lines his ideas more effectively than by numerous words. Buildings and machines when committed to a drawing were less easily forgotten. In addition, the artisan could perfect his idea before beginning his work, showing the plan to his employer for encouragement and satisfaction.

Franklin did not expend too much time or space upon arithmetic, accounts, and the first principles of geometry and astronomy. These obviously popular subjects spoke for themselves. He did, however, slyly

⁸¹Ibid., pp. 404-405.

⁸²Ibid., p. 404.

insert through a quote from Locke the idea that accounting was not to be looked down upon even by a gentleman. Accounting was not necessary for "a Gentleman to get an estate, yet there is nothing of more use and efficacy to make him preserve the estate he has."⁸³

Franklin then approached the study of English which was his chief departure from existing educational practice. He stated his views quite succinctly that students should study the English language through grammar, learn to read well orally with the proper pronunciation, and become proficient at composition through letter writing and preparing abstracts.

However, since it was here that Franklin's break with tradition was most evident, he added extensive quotes to support his views from Locke, Rollin, Fordyce, and Turnbull in the footnotes. Actually, he allowed Locke to plead his case for him.

That to those the greatest Part of whose Business in this World is to be done with their Tongues, and with their Pens, it is convenient, if not necessary, that they should speak properly and correctly, whereby they may let their Thoughts into other Mens Minds the more easily, and with the greater impression. Upon this Account it is, that any sort of Speaking, so as will make him be understood, is not thought enough for a Gentleman. He ought to study Grammar, among the other Helps of Speaking well, but it must be THE GRAMMAR OF HIS OWN TONGUE, of the Language he uses, that he may understand his own Country Speech nicely, and speak it properly, without shocking the Ears of those it is addressed to with Solecisms and offensive Irregularities.⁸⁴

⁸³Ibid., p. 405.

⁸⁴Ibid., p. 405.

With respect to writing, Franklin again turned to Locke.

The Writing of Letters has so much to do in all the Occurrences of human Life, that no Gentleman can avoid shewing himself in this kind of Writing. Occasions will daily force him to make this Use of his Pen, which besides the Consequences that, in his Affairs, the well or ill managing it often draws after it, always lays him open to a severer Examination of his Breeding, Sense and Abilities, than oral Discourses, whose transient Faults dying for the most Part with the Sound that gives them Life, and so not subject to a strict Review, more easily escape Observation and Censure.⁸⁵

Franklin also shrewdly included quotes from Locke which criticized the prevailing practice of teaching the "learned languages" over one's mother tongue. For example, Franklin quoted:

Would not a Chinese, who took Notice of this Way of Breeding, be apt to imagine, that all our young Gentlemen were designed to be Teachers and Professors of the dead Languages of foreign Countries and not to be Men of Business in their own.⁸⁶

Franklin next turned to the study of history.

But if HISTORY be made a constant Part of their Reading, such as the Translations of the Greek and Roman Historians, and the modern Histories of ancient Greece and Rome, etc. may not almost all Kinds of useful Knowledge be that Way introduc'd to Advantage, and with Pleasure to the Student?⁸⁷

Franklin believed that through the vehicle of history, students could be introduced to many other areas of knowledge. For example, from history students would naturally progress to the study of geography, chronology,

⁸⁵Ibid., p. 408.

⁸⁶Ibid., p. 406.

⁸⁷Ibid., pp. 410-411.

ancient customs and morality. Also "history will show the Wonderful Effects of Oratory, in governing, turning and leading great Bodies of Mankind, Armies, Cities, Nations."⁸⁸ From this acquaintance with the value of oratory, Franklin assumed that students would desire to learn that art.

History also introduced the study of government and good citizenship. The advantages of liberty, good laws and justice may thus be "fix'd in the Minds of Youth."⁸⁹ As historical questions of justice and injustice arose, they would be hotly debated. From an ardent desire to win arguments, Franklin felt that the principles of logic might then be approached to advantage.

In addition, Franklin continued, through the study of history students will come to the realization that many of the great men that they have read about:

. . . spoke two of the best Languages that ever were, [Latin and Greek] the most expressive, copious, beautiful; . . . they may be thereby made desirous of learning those Languages, and their Industry sharpen'd in the Acquisition of them.⁹⁰

While this admittedly was Franklin's compromise to obtain support for the Academy, Franklin's touch was evident even here for he made an attempt to distinguish which languages were most applicable to each profession.

All intended for Divinity should be taught the Latin and Greek; for Physick, the Latin, Greek and French; for Law, the Latin and French; Merchants, the French, German, and Spanish⁹¹

⁸⁸Ibid., p. 412.

⁸⁹Ibid., p. 413.

⁹⁰Ibid., p. 415.

⁹¹Ibid.

Finally, Franklin recommended the study of modern histories which would give students a connected view of human affairs.

It was evident that Franklin recognized the value of motivation in learning. Not only would the trustee's visits be an incentive to study, but he realized that the content of education itself could be an efficient motivator. Also, he was able to place the curriculum in perspective and see the relatedness of various disciplines which was not common practice at that time. Interestingly, throughout the Proposals Franklin referred to learning with positive terms such as delight and pleasure. For him learning was a constant source of satisfaction and he desired students to have the same experience.

In conjunction with the history of men, Franklin advocated that the histories of nature be studied "which would not only be delightful to Youth, . . . but afterwards of great use to them, whether they are Merchants, Handicrafts, or Divines."⁹² Judging from the footnotes used in support of his argument for the study of natural history, Franklin meant to include an introduction to today's subjects of botany, chemistry, biology, anatomy, meteorology, and astronomy. And "while they are reading Natural History," Franklin continued, "might not a little Gardening, Planting, Grafting, Innoculating, etc. be taught and practiced"⁹³ by making excursions to neighboring farms, "the Improvement of Agriculture being useful to all, and Skill in it no Disparagement to any."⁹⁴

⁹²Ibid., p. 416.

⁹³Ibid., p. 417.

⁹⁴Ibid.

Finally, Franklin recommended introducing students to the history of commerce--the study of the rise in manufacturing and trade. He continued:

And this, with the Accounts in other History of the prodigious Force and Effect of Engines and Machines used in War, will naturally introduce a Desire to be instructed in Mechanicks, and to be inform'd of the Principles of that Art by which weak Men perform such Wonders, Labour is sav'd, Manufactures expedited, etc. etc.⁹⁵

In the conclusion to his Proposals, Franklin reemphasized what he believed was the chief aim of education--to develop in youth the desire and ability to serve others.

The idea of what is true Merit, should also be often presented to Youth, explain'd and impress'd on their Minds, as consisting in an Inclination join'd with an Ability to serve Mankind, one's Country, Friends and Family; which Ability is (with the blessing of God) to be acquir'd or greatly encreas'd by true Learning; and should indeed be the great Aim and End of all Learning.⁹⁶

After the Proposals were published, Franklin, as was his custom, set about obtaining subscriptions to support the academy. His success was immediate and he and Tench Francis were appointed to draw up a Constitution.⁹⁷ Although the Proposals nowhere indicated a dual system or bifurcation between an English School and a Latin School, it is evident from the Constitution that two parallel means of education were to be initiated. The terms Latin School and English School are first evident in the Constitution of the Academy. In addition, the first evidence of the partiality in favor of the Latin School is

⁹⁵Ibid., p. 418.

⁹⁶Ibid., p. 419.

⁹⁷Smythe, op. cit., Vol. X, pp. 10-11.

noticeable. The Latin Master is to be rector of the academy with supervision of all instruction and to be paid twice the salary of the English Master while teaching half the students.⁹⁸ It appears that already Franklin's plans were being subordinated to the classicists.

Twenty-four of the largest subscribers agreed to serve as trustees for the new academy. Most were prominent and wealthy men in the city.⁹⁹ The institution was to be nonsectarian although in practice three-fourths of the trustees were Episcopalians and an Anglican tinge colored the institution during its colonial days.¹⁰⁰ The academy was unique in that it was established by a voluntary group of public minded citizens "for purely secular and civic purposes, without the support of any religious body or the patronage of any person or government."¹⁰¹

On January 7, 1751, the academy was formally opened with a commemorative sermon preached by the Reverend Richard Peters.¹⁰² To this sermon when published Franklin annexed his Idea for an English School.¹⁰³

⁹⁸"Constitutions of the Publick Academy in the City of Philadelphia," November 13, 1749, Labaree, op. cit., Vol. III, pp. 422-428.

⁹⁹Cheyney, op. cit., p. 30.

¹⁰⁰Ibid., p. 32.

¹⁰¹Ibid., p. 33.

¹⁰²Ibid., pp. 37-38.

¹⁰³Smythe, op. cit., Vol. X, p. 11.

At the request of the trustees, Franklin had prepared a plan for the English School¹⁰⁴ that spelled out in greater detail his ideas as to the manner in which the English language should be taught.¹⁰⁵ He included the study of grammar, spelling, vocabulary, reading, composition and rhetoric. Both the history of men and of nature provided the subject matter for reading. In essence, Franklin proposed a plan whereby students would acquire a thorough mastery of English. However, this school was not to be the entire course of study for the students; its curriculum was to be supplemented by the writing and arithmetic schools. Consequently, the entire content of the student's curriculum was similar to that advanced in the Proposals less the learned languages.

During the infant stages of the academy, Franklin took an active part in all its affairs including the search for a Rector. William Smith appeared the perfect choice. Educated in Scotland at the University of Aberdeen, he arrived in New York in 1751 as tutor to the two sons of Colonel Martin of Long Island. In 1753, he published A General Idea of the College of Mirania, which was addressed to those persons seeking a plan for a college in New York. Outlining the kind of institution that he thought would best meet the demands

¹⁰⁴Franklin to Samuel Johnson, October 25, 1750, Labaree, op. cit., Vol. IV, pp. 77-82.

¹⁰⁵"Idea of the English School, Sketch'd Out for the Consideration of the Trustees of the Philadelphia Academy," Labaree, op. cit., Vol. IV, pp. 102-108.

of the new country, his plan included a school for those destined for the 'mechanic profession.' As a result of this essay, a copy of which he sent Franklin, he came under Franklin's notice.¹⁰⁶ After a period of correspondence and a visit by Smith to Philadelphia, Franklin decided he was the man to head the academy. Bringing his influence to bear on the trustees, Franklin succeeded in having Smith appointed in May of 1754.¹⁰⁷ During the twenty-five years of Smith's tenure he was the leading figure in the affairs of the college. The history of the Academy and the College of Philadelphia was one with the career of William Smith.¹⁰⁸

In June 1755, a new charter was approved enabling the trustees additionally to grant college degrees.¹⁰⁹ Thus, the original scope of the academy was substantially enlarged.

The curriculum of the College of Philadelphia was a three-year course of advanced studies with approximately one-third of the students' time devoted to Latin, Greek, and the classic authors; another third to mathematics and natural science; and the remaining third to logic, ethics, metaphysics and oratory.¹¹⁰

¹⁰⁶Harris Elwood Starr, "William Smith," Dictionary of American Biography (New York: Charles Scribner's Sons, 1935), Vol. XVII, pp. 353-354.

¹⁰⁷Cheyney, op. cit., pp. 42-43.

¹⁰⁸Starr, op. cit., p. 354.

¹⁰⁹Cheyney, op. cit., p. 43.

¹¹⁰Cheyney, ibid., pp. 82-83.

Under the college were numerous "Schools" that made up the academy. Unfortunately, the Latin and English Schools were antagonists from the beginning, with the English School subordinated to the Latin School in prestige, money, and materials. Gradually, the Latin School encompassed a classical course and became merely a preparatory school for the college.¹¹¹ Unhappily, not only did the Latin School and the College not live up to Franklin's plans but the English School, which could have prospered and in fact did so at first, declined steadily.¹¹²

That Franklin was disappointed and somewhat bitter over the course that the academy and his English School followed is evident from two sources. In 1759, replying to his old friend Ebenezer Kinnersley, who had written Franklin expressing his dissatisfaction with the state of the English School, Franklin stated:

Before I left Philadelphia, everything to be done in the Academy was privately preconcerted in a Cabal without my Knowledge or Participation and accordingly carried into Execution. The Schemes of Public Parties made it seem requisite to lessen my Influence wherever it could be lessened. The trustees had reap'd the full Advantage of my Head, Hands, Heart and Purse, in getting through the first Difficulties of the Design, and when they thought they could do without me, they laid me aside.¹¹³

¹¹¹Cheyney, ibid., pp. 71-73.

¹¹²Ibid., pp. 76-78.

¹¹³Franklin to Ebenezer Kinnersley, July 28, 1759, Labaree, op. cit., Vol. VIII, pp. 415-416.

Later in 1789, at a time in his life when he could have been finishing his Autobiography as many friends were urging him to do, Franklin wrote a paper in which he detailed the partiality shown to the Latin School in favor of the English School and charged the Trustees with neglect of the English School.

I flatter myself, Gentlemen, that it appears by this time pretty clearly from our own Minutes, that the original Plan of the English school has been departed from; that the Subscribers to it have been disappointed and deceived, and the Faith of the Trustees not kept with them; that the Publick have been frequently dissatisfied with the Conduct of the Trustees, and complained of it; that, by the niggardly Treatment of Good Masters, they have been driven out of the School, and the Scholars have followed, while a great Loss of Revenue has been suffered by the Academy; for that the numerous Schools now in the City owe their Rise to our Mismanagement, and that we might as well have had the best Part of the Tuition-Money paid into our Treasury, that now goes into private Pockets, that there has been a constant Disposition to depress the English School in favour of the Latin; and that every Means to procure a more equitable Treatment has been rendered ineffectual; so that no more Hope remains while they continue to have any Connection.¹¹⁴

At the conclusion of this paper, Franklin, mustering all his resources, took one final parting shot at the obsolete practice of learning Latin and Greek. Explaining the origin of the practice:

. . . all the Knowledge then contain'd in Books, viz. the Theology, the Jurisprudence, the Physic, the Artmilitary, the Politicks, the Mathematics and Mechanics, the Natural and moral philosophy, the Logic and Rhetoric, the Chemistry, the Pharmacy, the Architecture,

¹¹⁴Smythe, op. cit., p. 28.

and every other Branch of Science, being in those Languages, it was of course necessary to learn them, as the Gates through which Men must pass to get at that Knowledge.¹¹⁵

But, claimed Franklin, conditions have changed, printing has made books inexpensive, more people are literate, and the whole body of knowledge once available only through the learned languages now has been translated into the common vernaculars. The learned languages were no longer the only keys to knowledge. He continued:

But there is in Mankind an unaccountable Prejudice in favour of ancient Customs and Habitudes, which inclines to a Continuance of them after the Circumstances, which formerly made them useful, cease to exist.¹¹⁶

To illustrate, Franklin recounted the practice of wearing hats. Once they were useful as protection for the head, but gradually the practice of wearing wigs and the availability of umbrellas made them impractical and unnecessary. Yet, people still considered the Hat as an integral part of dress and ". . . a man of fashion is not thought dress'd without having one, or something like one, about him, which he carries under his Arm."¹¹⁷

Franklin then compared the practice of requiring children to learn Latin and Greek to the practice of still carrying a hat under the arm although it no longer serves any useful purpose. He concluded by stating:

¹¹⁵Ibid., p. 29.

¹¹⁶Ibid., p. 30.

¹¹⁷Ibid., p. 31.

The still prevailing custom of having schools for teaching generally our children, in these days, the Latin and Greek languages, I consider therefore, in no other light than as the Chapeau bras¹¹⁸ of modern Literature.

Thus the Time spent in that Study might, it seems, be much better employ'd in the Education for such a Country as ours; and this was indeed the Opinion of most of the original Trustees.¹¹⁹

Franklin designed an educational plan that incorporated many of the offerings of the private schoolmasters in the city. He was keenly aware that a traditional classical education could not serve the needs of a rapidly expanding middle class in a changing society. His design was intended for the middle class. At the conclusion of his Ideas of the English School he wrote "thus instructed, Youth will come out of this School fitted for learning any Business, Calling or Profession except wherein Languages are required"¹²⁰ This exempted the professions of law, theology, and medicine which the classical curriculum served. Franklin was not interested in establishing another school for this conservative aristocratic class. His sympathies and interest lay with the middle class group of tradesmen, artisans, surveyors, and accountants whose educational needs could not be filled by the traditional

¹¹⁸An ornamental hat carried under the arm.

¹¹⁹Smythe, op. cit., p. 31.

¹²⁰Labaree, op. cit., Vol. IV, p. 108.

college and whose attendance with private schoolmasters was haphazard at best. Hats and the "learned languages" both had to be reexamined in the light of the present day.

It was Franklin's nature to subject tradition to scrutiny, to bring reason and the data of his own experience to bear upon current problems. Thus, he was able to rise above tradition and objectively assess the education necessary for American youth. While his influence at first was small and not immediately apparent, his Proposals and Ideas of the English School were widely read. As Franklin became an international figure of great renown, his thoughts on education carried more weight and force. The nineteenth century saw the beginning of many academies, high schools and colleges with curricula geared to the demands of the new nation and reflecting Franklin's educational views. One was the United States Military Academy.

CHAPTER III
THE RELATIONSHIP BETWEEN BENJAMIN FRANKLIN
AND JONATHAN WILLIAMS

Few men of any age can compare in stature with Benjamin Franklin. His grandnephew, Jonathan Williams, however, shared Franklin's multiplicity of interests and resembled Franklin in many ways, although on a smaller scale. Williams' varied careers as merchant, scientist, writer, soldier, lawyer, engineer, and educator remind one of Franklin's versatility. His interest in science paralleled Franklin's. There can be little doubt that Jonathan Williams felt the influence of such a famous and powerful relative as Franklin. Influence, like other nonobjectifiable qualities, is not measurable. It is, however, the purpose of this chapter to suggest how Franklin's stature, power, and tutelage affected his grandnephew, Jonathan Williams, and to probe their lengthy relationship.

Jonathan Williams, Jr., was born in Boston, Massachusetts, on May 26, 1750. His mother, Grace Williams, nee Harris, was the niece of Benjamin Franklin, thus making Jonathan his grandnephew. In practice,

Franklin referred to him as Cousin Jonathan. Williams' father, Jonathan Williams, Sr.,¹ was a successful and well-to-do merchant engaged in trade with the West Indies.²

Little is known of Williams' early childhood. According to an account written by his son Henry in 1873, he was educated in Boston and was an intelligent and studious youth. He taught himself French as his father refused him a tutor due to a general dislike for French principles and ideas. At an early age, Jonathan was introduced to his father's counting house and began his career as a merchant.

His long and intimate association with Franklin began in November of 1770 when he and his brother Josiah made a trip to England in the company of their uncle, John Williams. They were greeted enthusiastically by Franklin and invited to live with him at his Craven Street residence during their stay. It is probable that Josiah and Jonathan were sent to England to broaden their education and at the same time make valuable contacts under Franklin's tutelage. Franklin arranged for music lessons for Josiah, who although blind was extremely talented.³

¹During the elder's lifetime, Jonathan was usually addressed as Jonathan Williams, Jr., however, he dropped this upon his father's death in 1796.

²Henry J. Williams, "A Brief Account of the Family of General Jonathan Williams," 1873, MS in Library of the American Philosophical Society. Cited hereafter as Henry J. Williams.

³Ibid.

Jonathan's mother had requested that Franklin find some employment for her son during his visit. As a result, Franklin expressed a wish to Jonathan that his accounts be put in order. In a letter to Jonathan's mother, Franklin related his good impression of Jonathan's industry, seriousness, and knowledge of accounts. He wrote,

And as you hinted to me, that it would be agreeable to you, if I employ'd Jonathan in Writing, I requested him to put my Accounts in Order, which had been much neglected. He undertook it with the utmost chearfulness and Readiness, and executed it with the greatest Diligence, making me a compleat new Set of Books, fairly written out and settled in a mercantile Manner, which is a great Satisfaction to me, and a very considerable Service. I mention this, that you may not be in the least Uneasy from the Apprehension of their Visit being burthensome to me; it being, I assure you, quite the contrary.

It has been wonderful to me to see a young Man from America, in a Place so full of various Amusements as London is, as attentive to Business, as diligent in it, and keeping as close at home till it was finished, as if it had been for his own Profit; and as if he had been at the Publick Diversions so often, as to be tired of them.⁴

Franklin was also impressed by both brothers' frugality; ". . . I never saw two young men from America more prudent and frugal, than he and his brother are."⁵

To show his gratitude to Jonathan for putting his books in order, Franklin purchased a handsome watch which he presented to him with his

⁴Franklin to Mrs. Williams, March 5, 1771, Albert Henry Smythe, The Writings of Benjamin Franklin (New York: The Macmillan Company, 1905-1907), Vol. V, pp. 311-312.

⁵Franklin to Jonathan Williams, Sr., March 5, 1771, Ibid., Vol. V, p. 310.

thanks. Upon receiving the watch, Jonathan remarked that he would much rather have the old one that Franklin then wore. Franklin immediately handed his old one to Jonathan, retaining the other for his own use. This watch was in his son Henry's possession in 1873 and he reported that on the back it was inscribed, "The gift of Dr. Benjamin Franklin, L.L.D. and B.S. to Jonathan Williams Jr. April 25th, 1771."⁶

Two other signs of Franklin's esteem for his grandnephew occurred during this visit. In May, Franklin, discouraged by the widening breach between America and Great Britain and feeling the rigors of an especially cold London winter, set out upon a tour of recuperation. His invited companions on this journey were his grandnephew, Jonathan Williams, Jr; the Dutch scientist, John Ingenhousz; and a friend and pedagogue, John Canton, with whom Franklin had been discussing the properties of electricity. Their tour took them to Birmingham, Leeds, Sheffield, and Manchester. In Leeds, the party called upon Joseph Priestly, the famous scientist, and engaged in a spirited discussion upon the properties of sound.⁷ Later in August of that year when Franklin visited Scotland and Ireland for several months, he left young Williams in charge of his business affairs in London.⁸

⁶Henry J. Williams, op. cit.

⁷J. Bennett Nolan, Benjamin Franklin in Scotland and Ireland (Philadelphia: University of Pennsylvania Press, 1956), pp. 123-127.

⁸Ibid., p. 138.

Jonathan Williams returned to America at the close of 1771 and opened a store in Boston where he was engaged in business for several years.⁹

During the winter of 1774, he returned to London where he was welcomed again by Franklin with joy and affection.¹⁰ He again took up residence with the Doctor.

Williams' return to London occurred almost immediately after the destruction of the tea in Boston Harbour on December 16, 1773. It is probable that he carried the first accounts of this event to England. Soon after his arrival he called upon Lord Dartmouth, the Colonial Secretary, for whom he had brought letters on American affairs. Lord Dartmouth questioned him upon the temper and determination of the American people. Williams with the strictest truth for his guide told Lord Dartmouth:

. . . that the Americans never would submit; that they would not be surprised when the other acts should arrive; that they expected the worst, and were accordingly prepared; that I believed the junction would take place; and that they thought now or never was the time; that they supposed by submission they would make themselves the most abject slaves on earth; and that by opposition they could not be worse; that Parliament had no right to tax them; and that they would die by this opinion; and that a universal non-exportation would be attended with salutary effects.¹¹

⁹Henry J. Williams, op. cit.

¹⁰George Washington Cullum, Campaigns of the War of 1812-1815, Against Great Britain (New York: James Miller, 1879), p. 14.

¹¹Ibid., pp. 14-15.

His lordship then asked him if he knew Mr. Williams, who was the moderator of the meetings at Faneuil Hall that had led to the tea's destruction.

He is my father, my lord, Williams replied. He was in that meeting as any other man might be, and when chosen was much surprised; he expressed himself as being unacquainted with the office; and on the motion being put, and passed in the negative, he therefore officiated.¹²

Under these circumstances perhaps it is understandable why the elder Williams' store was burned, his Boston property confiscated or occupied and he was forced to flee Boston with his family to Worcester in 1775.¹³

Jonathan Williams remained in London engaged in mercantile interests and most likely attempting to situate himself favorably with a large English house engaged in trade. Franklin wrote to him after his return to Philadelphia in the spring of 1775:

I have not before written to you imagining you would hardly be found there: but now I find by Mr. Alexander's Letter (to whom my best Respects) that he advises you to stay for the Chance of something turning up to your advantage.¹⁴

In the same letter Franklin thanked Jonathan for his "Industry in Packing and Dispatching my Things."

On the following day Franklin while writing to his good friend Bishop Shipley displayed his continued good impression of his grandnephew:

¹²Ibid., pp. 15-16.

¹³Henry J. Williams, op. cit.

¹⁴Franklin to Williams, September 12, 1775, Smythe, op. cit., Vol. VI, p. 428.

This will be delivered to you by Mr. Jonathan Williams, a nephew of mine whom I left in my lodgings. Anything you see fit to send me may be safely trusted to his care and direction. He is a valuable young man, having, with great industry and excellent talents for business, a very honest and good heart. If he should stay in London I beg leave to recommend him to a little of your notice.¹⁵

In addition to pursuing his own business interests, at this time Williams also assisted Benjamin Vaughn and others in publishing the first collection of Franklin's political writings.¹⁶

Williams was just at the point of completing an attractive mercantile connection when the approaching separation of the two countries convinced him to leave England and reside in France. From Nantes in February of 1777 he wrote to his father:

When I wrote to you from England I was in the expectation of taking up my residence in that country. The scene is now changed; and since it becomes a question which of the two countries I would prefer in a separate state, I did not hesitate to quit all my lucrative views, and to come hither, to do all the service I can, without expectation of further emolument than a subsistence. It is not improbable that I shall engage in the American trade in some part of France, or return to some part of America charged with the management of commercial matters.¹⁷

¹⁵Carl Van Doren (ed.), Benjamin Franklin's Autobiographical Writings (New York: Viking Press, 1945), p. 411.

¹⁶Verner Winslow Crane, Letters to the Press, 1758-1775 (Chapel Hill, North Carolina: University of North Carolina Press, 1950), p. liii.

¹⁷Cullum, op. cit., pp. 17-18.

In the meantime, Franklin had been appointed by the Continental Congress as one of three American commissioners to France along with Silas Deane and Arthur Lee in an attempt to obtain financial assistance for the struggling colonies. Franklin arrived in France in December of 1776 and was shortly thereafter joined by Williams.¹⁸

The Franklin who arrived in France was no ordinary man--nor was he unknown. The French knew him from two previous visits and translations of his scientific works and parts of Poor Richard. For them, Franklin combined the wit of Voltaire with the natural virtues celebrated by Rousseau. How appropriate to have this rustic philosopher plead for the young nation's "natural rights" and freedom from oppression. The French loved Franklin and he became a hero overnight. They delighted in his fur cap, plain dress and unassuming manner; Franklin became the symbol of the new age.¹⁹

Likenesses of him were circulated throughout France. It became fashionable to include his portrait on the mantelpiece, and medalions with his image were worn by ladies of fashion. He wrote his daughter that so many prints and pictures of him had been circulated that they:

. . . have made your father's face as well known as that of the moon, so that he durst not do any thing that would oblige him to run away, as his phiz would discover him wherever he should venture to show it.²⁰

¹⁸Henry J. Williams, op. cit.

¹⁹Carl Becker, "Benjamin Franklin," Dictionary of American Biography (New York: Charles Scribner's Sons, 1931), Vol. VI, p. 591.

²⁰Franklin to Sarah Bache, June 3, 1779, Smythe, op. cit., Vol. VII, p. 347.

John Adams, whose jealousy made him extremely critical of Franklin, managed to describe exactly the impression that Franklin made on France:

His reputation was more universal than that of Leibnitz or Newton, Frederick or Voltaire, and his character more beloved and esteemed than any or all of them. . . . His name was familiar to government and people, to kings, courtiers, nobility, clergy, and philosophers, as well as plebeians, to such a degree that there was scarcely a peasant or a citizen, a valet de chambre, coachman or footman, a lady's chambermaid or a scullion in a kitchen, who was not familiar with it, and who did not consider him as a friend to human kind. When they spoke of him, they seemed to think he was to restore the golden age.²¹

Thomas Jefferson wrote ". . . that there appeared to me more respect and veneration attached to the character of Dr. Franklin in France, than to any other person in the same country, foreign or native."²² He also confessed that his "succession to Dr. Franklin, at the court of France, was an excellent school of humility."²³ Frequently when Jefferson was presented to someone as the new American minister, they would ask, "it is you, Sir, who replace Doctor Franklin?" To which Jefferson replied, "no one can replace him, Sir: I am only his successor."²⁴

²¹Charles Francis Adams (ed.), The Works of John Adams (Boston: Little Brown and Company, 1854), Vol. I, p. 660.

²²Jefferson to unknown correspondent, February 19, 1791, Albert Ellery Bergh (ed.), The Writings of Thomas Jefferson (Washington, D. C., 1903-1904), Vol. VIII, p. 129.

²³Ibid., p. 130.

²⁴Ibid.

One wonders what it was like to be the grandnephew and confidante of so immensely powerful and popular a figure as Franklin. To what extent did Franklin's friendship mold Williams' character, open his mind to new ideas, and create a fertile ground for the pursuit of science? From 1776 to 1785, while Franklin was one of the most important men on the continent, Williams enjoyed both his friendship and his confidence.

Shortly after Williams joined Franklin in France, he became involved in American trade and commerce at the seaport of Nantes. Franklin soon wrote paternally from Paris:

I think Connection with Mr. Schweighauser might be advantageous to you both in the way of Business. Besides he is rich and has handsome Daughters. I know not whether you can get one of them. I only know you may deserve her.²⁵

Soon after Williams was temporarily appointed United States Commercial Agent at Nantes to replace Thomas Morris whose habitual intemperance made him unsuitable for the job.²⁶ Thus Williams became involved in managing shipments of valuable American supplies and selling prizes taken by American ships at sea.

²⁵Franklin to Williams, February 5, 1777, Smythe, op. cit., Vol. VII, p. 21. Mr. John D. Schweighauser was then one of the United States' Commercial Agents at Nantes.

²⁶Mildred E. Lombard, "Jonathan Williams," Dictionary of American Biography (New York: Charles Scribner's Sons, 1936), Vol. XX, p. 281; Franklin to Williams, December 22, 1777, Smythe, op. cit., Vol. VII, p. 78.

Arthur Lee suggested to Franklin that Williams be permanently appointed to this position, but by this time relations were such between Franklin and Lee that Franklin advised Williams not to accept as he did not desire to be obliged to Arthur Lee for any reason.²⁷ Franklin's judgment of Lee was justified when later Lee accused Williams of misappropriating 100,000 livres of public money. Williams' accounts were submitted to a panel of merchants at Nantes and he was completely exonerated on August 17, 1779.²⁸ Williams remained in Nantes until 1783 engaged in purchasing and shipping supplies to America for Franklin and other individuals.²⁹

Franklin incensed by Lee's accusations made no further attempt to appoint Williams to public office. His reluctance to involve Williams any further in governmental business is apparent from a letter he wrote to Jonathan in which he said,

Particularly I will enter into no such Bargain with my Cousin. If it should prove a hard one for you, it would hurt my Feelings of Friendship; and if a profitable one, I shall be reflected on as having given you a lucrative Jobb at the Expense of the Publick.³⁰

²⁷Franklin to Williams, February 1778, Smythe, ibid., Vol. VII, p. 113.

²⁸Franklin to Arthur Lee, March 27, 1779, Smythe, ibid., Vol. VII, pp. 271-273; Lombard, op. cit., p. 281.

²⁹Franklin to Williams, May 10, 1780, Smythe, op. cit., Vol. VIII, p. 64; Franklin to Williams, June 27, 1780, Smythe, ibid., Vol. VIII, pp. 112-113; Franklin to Williams, December 27, 1780, Smythe, ibid., Vol. VIII, pp. 188-189; Franklin to Williams, January 20, 1781, Smythe, ibid., Vol. VIII, pp. 197-198; Franklin to Williams, June 15, 1781, Smythe, ibid., Vol. VIII, pp. 270-271.

³⁰Franklin to Williams, March 23, Smythe, ibid., Vol. VIII, p. 400.

It was to Jonathan that Franklin wrote his often quoted and well-known piece of advice upon decision making which Franklin called Moral Algebra:

If you doubt, set down all the Reasons, pro and con, in opposite Columns on a Sheet of Paper, and when you have considered them two or three Days, perform an Operation similar to that in some questions of Algebra; observe what Reasons or Motives in each Column are equal in weight, one to one, one to two, two to three, or the like, and when you have struck out from both Sides all the Equalities, you will see in which column remains the Ballance. It is for want of having all the Motives for and against an important Action present in or before the mind at the same time, that People hesitate and change their Determinations backwards and forwards Day after Day, as different Sets of Reasons are recollected or forgot, and if they conclude and act upon the last set, it is perhaps not because those were the best, but because they happen to be present in the Mind, and the better absent. This kind of Moral Algebra I have often practised in important and dubious Concerns, and tho' it cannot be mathematically exact, I have found it extremely useful. By the way, if you do not learn it, I apprehend you will never be married.³¹

It appears that Jonathan learned his algebra well for on September 12, 1779, he married Mariamne Alexander, the daughter of one of Franklin's close friends, William Alexander, of Edinburgh, Scotland. The ceremony took place at Paris in the presence of Dr. Benjamin Franklin.³²

In 1783, Jonathan Williams was appointed by the Farmers General of France as their agent to supply them with tobacco. As a result of this appointment, he moved his family from Nantes to St. Germain-en-Laye which was within easy distance of Franklin's residence in Passy. Here he remained until leaving France with Franklin in 1785.³³

³¹Franklin to Williams, April 8, 1779, Smythe, ibid., Vol. VII, pp. 281-282.

³²Henry J. Williams, op. cit.

³³Ibid.

Williams' interest in science was apparent as early as 1783 when he wrote to the Philosophical Society of Boston sending them a description of a flying machine superior to Montgolfiers. In addition, his interest in forward-progress in science through philosophical societies is foreshadowed for he stated:

Our country has already become Famous for its bold Exertions in the Cause of Liberty, and the success of them have established a Reputation which I hope will end only with time. After having obtained an assistance for Humanity, I am happy to see Associations Formed for its benefit by the Encouragement of Science.³⁴

Among his papers from this time there is a diagram of a fireplace and chimney with the side inscription, "this idea was given me by Dr. B. F. at Passy I, Nov. 1784,"³⁵ and also a treatise on magnetism and electricity written at St. Germain in 1784.

Franklin's mission in France had been accomplished with the signing of the Peace treaty in September of 1783. In December, Franklin reminded Congress of its promise to recall him but it was not until May 2, 1785, that he received notice that he was free to leave.³⁶ Tired and in ill health, with a stone that kept him frequently in pain, he began to make preparations for his return to America. He requested Jonathan Williams' assistance in

³⁴Williams to the Philosophical Society of Boston, December 10, 1783, copy of MS in Lilly Library.

³⁵Diagram of Fireplace and Chimney, MS in Lilly Library.

³⁶Becker, op. cit., p. 594.

obtaining the most comfortable accommodations possible for him in his weakened condition.³⁷ On the twelfth of July, 1785, Franklin began his last trip home. As a parting gift, the king of France presented him with his miniature set with 408 diamonds. He was also furnished with a royal litter for the trip from Passy to Havre--both further signs of the high estimation in which he was held by the French government.³⁸ Williams joined him in England where he had been assisting in making arrangements for Franklin's trip.

Franklin, believing at last that his public life was over, devoted his voyage home to the pursuit of science, his first love and "the one mistress to whom he gave himself without reserve."³⁹ He was to write more on scientific matters that month than he had at any other time in his life.⁴⁰ In the form of a letter to Julien-David Le Roy, he wrote "Maritime Observations" which included a discussion of such diverse subjects as the rigging of ships, the advisability of joining two vessels together with crossbars to prevent oversetting, the use of water tight compartments to prevent sinking, the

³⁷Franklin to Williams, May 5, 1785, Smythe, op. cit., Vol. IX, pp. 324-325; Franklin to Williams, May 19, 1785, Smythe, op. cit., Vol. IX, p. 329.

³⁸Becker, op. cit., p. 594.

³⁹Ibid., p. 597.

⁴⁰Carl Van Doren, Benjamin Franklin (New York: The Viking Press, 1938), p. 727.

advantage of using the Gulf Stream to vessels sailing the Atlantic, and advice to passengers on what are the best stores to take on a trip along with a recommendation to do one's own cooking if possible.⁴¹ Franklin's interest in the Gulf Stream began in 1769 when as Postmaster he had observed that the mail packets from Falmouth to New York took longer than the merchant ships from London to Rhode Island. Upon inquiry, he found that the captains from Rhode Island were acquainted with the Gulf Stream and used it to their advantage when sailing to and from America. He had at that time acquired a map of the Gulf Stream from Captain Folger, a mariner from Nantucket, which he attempted to circulate among the captains of the packets engaged in passage between England and America.⁴²

On this voyage, at Franklin's request, Williams kept a daily journal recording the temperature of the air, sea water, latitude, longitude, wind direction, etc. These records were included in Franklin's "Maritime Observations" and he wrote at their closure, "This last journal was obligingly kept for me by Mr. J. Williams, my fellow passenger in the London packet, who made all the experiments with great exactness."⁴³ On the basis of these and other experiments, Franklin concluded that the water of the Gulf Stream is warmer and a thermometer could be used to detect the presence of the Gulf Stream and other currents.

⁴¹"Maritime Observations," Smythe, op. cit., Vol. IX, pp. 372-413.

⁴²Ibid., pp. 394-396.

⁴³Ibid., p. 413.

This collaboration with Franklin on the relationship between the temperature of sea water and the presence of currents was the progenitor of some of Williams' own research.

In the introduction to his book Thermometrical Navigation, published in 1799, he wrote,

In the months of August and September, 1785 I was a fellow passenger with the late Dr. Franklin from Europe to America and made, under his direction, the experiments mentioned in his description of the course of the gulph stream, an account of which was annexed to his maritime observations, and published in the Philosophical Transactions Vol II, p. 328; I then determined to repeat these experiments in my future voyages. Accordingly on a passage from Boston to Virginia in Oct 1789, I kept a journal of the heat of the air and water at sun rise, noon and sunset. I then noticed that the sea water out of soundings was about ten degrees warmer than that on the coast, and it very naturally occurred to me that the thermometer might become a useful instrument to indicate the approach to the shore.⁴⁴

Williams did continue his experiments and advanced the hypothesis in his book Thermometrical Navigation that the relative temperature of sea water will indicate the presence of the Gulf Stream and/or the presence of soundings (the temperature drops as the water becomes shallow), and that this method of navigation will give ample warning of approaching dangers to sailors at sea.

Williams does not fail to give credit to Franklin for both his discovery and for his own personal interest in science. In his introduction he continued,

Dr. Franklin's observations had the knowledge of currents for their object, and this extension of his discovery [the relationship between temperature and depth/or soundings] did not occur; but as

⁴⁴Jonathan Williams, Thermometrical Navigation (Philadelphia: R. Aitken, 1799), p. 12.

I am indebted to his instructive conversation and example, for my inducement to pursue philosophical researches when in my power to do so, he may be considered as the original cause of what is now presented for examination.⁴⁵

Franklin wrote two other philosophical pieces on this journey. In a letter to John Ingenhousz he discoursed, "On the Causes and Cure of Smokey Chimneys," and he also wrote a "Description of a New Stove for Burning of Pitcoal, and Consuming All its Smoke." Both pieces were later published in the American Philosophical Society's Transactions and read before that body.⁴⁶

When Williams returned to America with Franklin, his family did not accompany him. His wife and two daughters went to London to reside with Mrs. Williams' three sisters in the home of their uncle, Alexander John Alexander, who had been like a second father to the girls. Williams returned to America alone to straighten out his financial affairs that had become hopelessly tangled as a result of the war, the difficulty of collecting debts, and the depreciation of the currency.⁴⁷ In time he found that his situation was such that he had to declare bankruptcy, but this he resorted to do only after three years of attempts to resolve his difficulties to his creditors' benefit.⁴⁸

⁴⁵Ibid., p. 13.

⁴⁶Smythe, op. cit., Vol. IX, pp. 413-462.

⁴⁷Henry J. Williams, op. cit.; Williams to Mrs. Williams, October 19, 1787, MS in Lilly Library.

⁴⁸Williams to Mrs. Williams, September 30, 1788, MS in Lilly Library.

One unfortunate circumstance alienated him from part of Franklin's immediate family. While in France, he had engaged in making shipments with Mr. Bache and Mr. Shee. Bache was the husband of Franklin's daughter, Sarah. After the war, there was a question as to the balance owed Williams and since the principals could not reach a settlement, the matter was referred to court. The court awarded Williams 2,200 pounds; however, he also earned the lasting enmity of Mr. and Mrs. Bache. Even his closeness to Franklin could not bridge this gap, for as he later wrote Franklin's son:

From 1785 to 1790, I was principally in Philadelphia and strange as it may seem, spent many very many days with the Doctor in his Library, putting all his affairs of a pecuniary nature in order and doing many kinds of writing for him, without exchanging a word with Mr. or Mrs. Bache or ever being by them invited to view the inside of an apartment, or to wet my lips.⁴⁹

While much of his time was occupied with business affairs, Williams also found the leisure time to pursue scientific studies and to attend several courses of medical lectures.⁵⁰ He and Franklin discussed philosophical and scientific matters with Franklin acting as a mentor to Williams and a sounding board for his ideas.⁵¹ On July 18, 1887, Williams received the degree of

⁴⁹Williams to William Franklin, October 22, 1807, MS in Lilly Library.

⁵⁰Henry J. Williams, op. cit.

⁵¹Franklin to Williams, January 19, 1786, Smythe, op. cit., Vol. IX, pp. 480-481.

Master of Arts from Harvard University, and on July 20, 1788, he was elected a member of the American Philosophical Society.⁵² Williams contributed pieces to the Transactions of the American Philosophical Society and at various times served as secretary, councillor, and vice president.⁵³ In November, 1790, he presented to the Society his findings upon the relationship between the temperature of the sea water and its depth which he later published in Thermometrical Navigation.⁵⁴

Williams had earlier determined to make Philadelphia his permanent home:

One of the reasons which induced him to select Philadelphia as his future abode was no doubt to be near his friend and relation Dr. Benjamin Franklin from whom he had during his whole life received every mark of kindness and regard.⁵⁵

Mrs. Williams was also a favorite of Franklin's. Therefore, Jonathan wrote sorrowfully in August of 1789:

I wish I could promise myself to see you and her [Christine, his daughter] in the presence of Dr. Franklin, but I fear the good old man will not last long enough. His paroxysms are so frequent and so painful that he is obliged to apply to opium for his only relief. I sat with him the other day an hour or two and you was [were] the principal subject of our conversation. You have my dear as vast a Blessing from his as ever the most tender parent gave.⁵⁶

⁵²Henry J. Williams, op. cit.; Cullum, op. cit., p. 19.

⁵³Lombard, op. cit., p. 281.

⁵⁴Henry J. Williams, op. cit.; Cullum, op. cit., p. 20.

⁵⁵Henry J. Williams, op. cit.

⁵⁶Williams to Mrs. Williams, August 3, 1789, MS in Lilly Library.

In November of 1789, after settling his business affairs,⁵⁷ Williams sailed from Virginia to England to bring home his wife and eldest daughter, Christine, his second daughter having died in London. Williams remained in London until June of 1790.⁵⁸ "I heard of his death," Williams wrote, speaking of Franklin, "at Falmouth the day before I sailed [for America] and at Halifax where the packet put in."⁵⁹ Saddened and in mourning Williams returned to Philadelphia with his wife and daughter.

The high esteem in which Franklin held Williams is evidenced by his bequest to him in his will. Franklin left to Williams a portion of his books "marked with the name of Jonathan Williams."⁶⁰ Unfortunately, Williams never received these books and he later recounted to Franklin's son, William, how this occurred.⁶¹

During his last visit with Franklin before leaving for London to bring back his wife, Franklin asked him if he intended to pursue his medical studies. Williams replied that perhaps he might, at which point Franklin requested that

⁵⁷Mrs. Williams had an independent income which Williams' creditors could not touch and for a time Williams had to lean heavily on her financial resources. Williams to Mrs. Williams, February 5, 1789, MS in Lilly Library.

⁵⁸Henry J. Williams, op. cit.

⁵⁹Williams to William Franklin, October 22, 1807, MS in Lilly Library.

⁶⁰Smythe, op. cit., Vol. X, p. 499.

⁶¹Williams to William Franklin, October 22, 1807, MS in Lilly Library. The following account and quotes pertaining to the books are contained in this letter.

he bring from the other room his will. Franklin read to him the part of his will which gave him all his medical, anatomical, and surgical books, asking Williams to mark those books with his name. Williams wrote, ". . . some other expressions descriptive of his doubts of ever seeing me again, and of his approaching dissolution affected me, and I said little, but did nothing." After Williams had departed, he reflected that the books might as well be marked. Therefore, he wrote to Mrs. Hewson, a close friend of Franklin's, concerning the bequest.

Mrs. Hewson transmitted Williams' message to Franklin who called in his grandson, Benjamin Bache, and requested that he make a list of the books for Jonathan. When this was completed Franklin put this list in Mrs. Hewson's hands in the presence of Benjamin Bache stating "these are the Books I give to Cousin Jonathan."

After Franklin's death, the Baches finding no books with Jonathan Williams' name expressly written on them, and feeling no kindness towards him due to prior business affairs, gave the books intended for Williams to one of their sons who was pursuing medical studies. Williams, after returning from London, attempted to recover the books, producing the testimony of Mrs. Hewson and Benjamin Bache. He attempted to bring the matter to arbitration; however, the terms of arbitration could not be agreed upon by all parties, and Williams finally dropped the matter.

Even though he did not receive these books, Williams felt honored by his inclusion in Franklin's will and the high esteem that it announced publicly

that he felt for him. ". . . I think it no small legacy to stand on record as an object of his kind and affectionate remembrances," wrote Williams, "I rejoice in his good will." ⁶²

During the decade 1790-1800, Williams devoted himself to various activities and scientific studies. In 1794, he accompanied the forces that quelled the Whiskey Rebellion in western Pennsylvania. In 1796 he became associate judge in the court of common pleas in Philadelphia. ⁶³ In addition, his reputation as a scientist continued to grow. Those who are familiar with Franklin's scientific papers and projects cannot help noticing the similarity in many of Williams' writings. The titles of some of his scientific notes give one a clue to the scope of his curiosity and his interest in applying science to practical affairs. His topics included "To make an ice house in a warm climate," "Memoir on the claying of sugars," "To work a lunar observation by projection," "Method of removing salt from sea water," "Drawing of a cider press," and "A design for steps." ⁶⁴

Franklin's contribution to Williams' interest in science has already been established. It is also clear that their approach to science was similar.

⁶²The writer mentions this extensively to clear up the previously held supposition by biographers of the Military Academy that Williams brought with him to the Academy part of Franklin's Library. He may have brought several books lent or given him by Franklin prior to his death; however, he never received the books mentioned in Franklin's will.

⁶³Cullum, op. cit., p. 20; Lombard, op. cit., p. 281; many papers pertaining to the cases brought before him as judge are among the MSS in Lilly Library. Many dealt with debts and bankruptcy proceedings.

⁶⁴MSS in Lilly Library.

Both believed that science was a tool for man to use; not only to increase man's knowledge of his world, but additionally to help man overcome nature's arbitrary actions. Science could give man control of his environment, make life safer and more comfortable, and extend man's physical capabilities. Both were concerned with the practical application of scientific discoveries. Williams never doubted his indebtedness to Franklin in scientific matters, and he was later to refer to this again when he wrote to Franklin's son of West Point that it was:

. . . a station favorable to the pursuits of science, for the foundation of which I am more indebted to the habits of intimacy and daily instructions of your never to be forgotten Father, than to any other source whatever.⁶⁵

In the spring of 1800, Williams sought public office as the Purveyor of Public Supplies. He was provisionally appointed but for political reasons the position did not become permanent. At General Henry Knox's intercession, he was offered a commission as Major of the Artillerists and Engineers which after a brief hesitation he accepted in February of 1801.⁶⁶ Three months later, Jefferson, most likely because of Williams' relationship to Franklin and his reputation as a scientist, decided that he was the man to head the embryo military school.

⁶⁵Williams to William Franklin, October 22, 1807, MS in Lilly Library.

⁶⁶Williams to General Wilkinson, September 3, 1800, copy of MS in Lilly Library; Cullum, op. cit., p. 20.

CHAPTER IV

JONATHAN WILLIAMS AND THE UNITED STATES

MILITARY ACADEMY, 1802-1812

Institutions take shape slowly and the myriad factors that go into their makeup point to an inability to single out one agent as causal in any social project. Many people and events shared in the developments that led to the formation of the early Military Academy. For twenty-five years preceding its establishment, patriot voices were heard calling for some form of military education. Prominent among these were Henry Knox, John Adams, Alexander Hamilton, James McHenry, and George Washington.

By an act of Congress on March 16, 1802, the United States Military Academy was officially instituted. This act authorized the President of the United States to organize a Corps of Engineers and this Corps "when so organized shall be stationed at West Point, in the state of New York, and shall constitute a military academy."¹ Thus, the infant military school and the Corps of Engineers became a single entity.

¹Annals of Congress, 7th Congress, 1st Session, 1801-1802, p. 1312.

While the persons and arguments playing a role in its establishment were varied, four broad areas of concern may be singled out as those contributing most heavily to the formation of the Military Academy and its close identity with the Corps of Engineers.

Initially, America lacked trained engineers and military scientists. During the Revolutionary War, Americans had to rely upon foreigners for military engineers. With the exception of Kosciusko, they were all Frenchmen.² One of the earliest proponents of a military academy, Colonel Henry Knox, as early as 1776, submitted to Congress a plan to improve the artillery. He proposed that:

As officers can never act with confidence until they are Masters of their profession, an Academy established on a liberal plan would be of the utmost service to the continent, where the whole theory and practice of Fortification and gunnery should be taught; to be nearly on the same plan as that of Woolrich. . . .³

Woolrich was the British Military Academy established in 1741 to train artillerists and engineers.

When President John Adams attempted to execute the existing laws in 1800 by appointing two teachers and one engineer to instruct the Corps of Artillerists and Engineers, he found it difficult to find qualified persons. In a letter to the then Secretary of War, S. Dexter, he stated,

²Edgar Denton III, "The Formative Years of the United States Military Academy" (unpublished doctoral dissertation, Syracuse University, 1964), p. 5.

³Centennial of the United States Military Academy at West Point, New York, 1802-1902 (Washington: Government Printing Office, 1904), Vol. I, p. 202. Cited hereafter as Centennial.

I wish you may easily find teachers. . . . But I have an invincible aversion to the appointment of foreigners, if it can be avoided. It mortifies the honest pride of our officers and damps their arder and ambition.⁴

It appears that both American engineers and teachers of the mathematical sciences were in short supply. Amidst the growing climate of nationalism, the paucity of American officers knowledgeable in artillery and engineering had become a national embarrassment.

Secondly, there was a growing realization on the part of military leaders that military science, especially the knowledge necessary for an engineer and artillerist, was highly specialized and required formal instruction and training. General Washington in his "Sentiments on a Peace Establishment" of May, 1783, recommended:

Academies, one or more for the Instruction of the Art Military; particularly those Branches of it which respect Engineering and Artillery, which are highly essential, and the knowledge of which, is most difficult to obtain.⁵

He further continued to note ". . . that a Corps of able Engineers and expert Artillerists cannot be raised in a day, nor . . . in the same time, which it would take to form an excellent body of Infantry. . . ."⁶

⁴Charles Francis Adams (ed.), The Works of John Adams (Boston: Little, Brown and Company, 1854), Vol. IX, pp. 65-66.

⁵John C. Fitzpatrick (ed.), The Writings of George Washington (Washington, Government Printing Office, 1931-1944), Vol. XXVI, p. 375.

⁶Ibid., p. 397.

Construction of fortifications required a knowledge of natural and experimental philosophy, mathematics, mechanics, and other allied subjects. Since the early colleges still reflected the heavy classical influence, scientific knowledge was difficult to obtain. The average officer had little background in science. There was no formal institution of learning in the United States where future military engineers could be trained. Actually, the Federal Government's entry into the field of education was made necessary by the lack of private means.

Thirdly, Americans were suspicious and distrustful of standing armies. They had witnessed how regular forces on the Continent had become military elites existing to serve their own interests or those of a small aristocracy. Instead, Americans rested their faith on a home grown state militia--citizen soldiers who would respond in time of need. Yet, the experience of the Revolution had convinced them of the necessity of trained officers for an efficient and well disciplined army. A trained officer corps could provide the nucleus from which a national army could be mobilized. A military academy would play a multiple role. It would keep alive military science while providing for a trained Corps of Artillerists and Engineers, and its graduates would diffuse this knowledge to the state militia where they would provide the leadership necessary in times of national defense.

In a report to Congress submitted in 1800 by Secretary of War, James McHenry, these sentiments were most concisely expressed:

. . . in proportion as the circumstances and policy of a people are opposed to the maintenance of a large military force, it is important that as much perfection as possible be given to that which may at any time exist. . . . military science in all its branches ought to be cultivated with peculiar care, in proper nurseries, so that a sufficient stock may exist, ready to be imparted and diffused to any extent, and a competent number of persons be prepared and qualified to act as engineers, and others as instructors to additional troops, which events may successively require to be raised.⁷

Lastly, American foreign relations were worsening. By the Treaty of Paris in 1783, Great Britain had acknowledged American independence. While America had proved its capacity for self-defense, its independence was legal--not moral. Great Britain continued to incite Indians upon American borders, interrupt naval commerce, impress American sailors, and threaten coastal towns. France was in the throes of a Revolution that had spread to other countries of the Continent. The French alliance of 1778 made it possible that America would become involved. Although the Washington administration hoped to keep America neutral, steps were taken to provide for the national defense. The threat of war revived interest in a military academy or some form of military instruction.

The first halting steps toward the establishment of a military academy came in May of 1794. By an act of Congress a Corps of Artillerists and Engineers was authorized and the Secretary of War directed to "provide at the public expense . . . the necessary books, instruments, and apparatus,

⁷American State Papers Class V, Military Affairs (Washington: Gales and Seaton, 1832-1861), Vol. I, p. 133.

for the use and benefit of the said Corps."⁸ The act further created the rank of cadet. Cadets were to be junior officers, learning their duties while on active service. Few cadets were appointed. A feeble attempt was made by those engineering officers stationed at West Point to provide instruction, but an "accidental" fire in 1796 brought even this to a halt.⁹

Congress continued to recognize the need for a trained Corps of Engineers and Artillerists for in April of 1798 it doubled the size of the Corps and continued the provision for books and apparatus to be supplied at public expense.¹⁰ Later that year in July, Congress authorized the appointment of four teachers to instruct the engineers and artillerists in the arts and sciences.¹¹ As previously noted, President Adams found it difficult to fulfill the provisions of this act as men knowledgeable in military science were scarce. Not until January of 1801 was the first teacher, Mr. George Baron, appointed. Mr. Baron conducted a mathematical school for the few

⁸Annals of Congress, 3rd Congress, 1793-1795, p. 1444. Approved May 9, 1794.

⁹Joseph G. Swift, The Memoirs of General Joseph Gardner Swift (Worcester, Mass.: The Press of F. S. Blanchard and Company, 1890), p. 37. General Swift states in his diary that this fire was the design of officers sent there for instruction.

¹⁰Annals of Congress, 5th Congress, 1797-1799, Part 3, pp. 3723-3724. Approved April 27, 1798.

¹¹Ibid., p. 3787. Approved July 16, 1798.

cadets then assigned to West Point. However, "it was soon found that the government of young military men was incompatible with the ordinary system of schools, and consequently this institution ran into disorder, and the teacher into contempt."¹²

On March 4, 1801, Thomas Jefferson was inaugurated President of the United States. Apparently unconcerned about his earlier question of the constitutionality of a military academy,¹³ he immediately began preparations for a military school. In a letter to Brigadier General Wilkinson on May 12, 1801, Secretary of War Henry Dearborn, stated,

The President having decided in favor of the immediate establishment of a military school at West Point and also on the appointment of Major Jonathan Williams as Inspector of Fortifications, it becomes necessary for the major to be at West Point as soon as possible for the purpose of directing the necessary arrangements at that place for the commencement of the school. . . .¹⁴

Williams, at this time, had been in the service less than three months having just been appointed by President Adams a Major in the Second Regiment

¹²Williams to Jefferson, March 14, 1808, "Second Report of the Superintendent of the Military Academy to the President of the United States," copy of MS in USMA Library. Cited hereafter as Report of 1808. This is published in Annals of Congress, 10th Congress, 1st Session, 1807-1808, Part 2, pp. 2808-2812.

¹³Albert E. Bergh (ed.), The Writings of Thomas Jefferson (Washington: 1903-1904), Vol. I, p. 409. As a member of President Washington's Cabinet in 1793, Jefferson was present when the Cabinet discussed plans to recommend the establishment of a military academy. He objected to it on the grounds that the Constitution would not authorize it.

¹⁴Dearborn to Wilkinson, May 12, 1801, Records of the Office of the Secretary of War: Letters Sent Military Affairs (National Archives), Vol. I, pp. 69-70. Cited hereafter as LSMA.

of Artillerists and Engineers. That summer he was on a tour of inspection for General Wilkinson along the Ohio River. "I am ordered to be at West Point next October," he wrote to his wife that summer, "and the formation of a military academy will fall to my lot. . . ." ¹⁵

What were President Jefferson's motives in appointing Jonathan Williams as the first superintendent of the Military Academy? They had been acquainted as early as 1785 in Paris where both were a part of Franklin's circle. Williams had acquired a reputation as a man of science. His collaboration with Franklin on several experiments was well known. He had been elected a member of the American Philosophical Society, of which Jefferson was also a member, and had served at various times as its secretary, councillor, and vice president. Results of his experiments were published in the Society's Transactions. Williams and Jefferson had corresponded on philosophical matters, and Williams had requested Jefferson to present the results of his own research to the Society. In 1799, Williams' book, Thermometrical Navigation, was published showing how the relative temperature of sea water could be used for navigational purposes. However, Williams'

¹⁵Williams to Mrs. Williams, June 26, 1801, MS in Lilly Library.

military background was limited to purchasing supplies during the Revolutionary contest and two translations done from the French of military treatises--

The Elements of Fortification and De Scheel's System of Artillery.¹⁶

President Jefferson's appointment of Jonathan Williams, an apparent neophyte in military affairs, to head the country's first military school was significant. It may be construed as an attempt to avoid a narrow parochial institution that would be strictly military and to found a national scientific institution, a project more akin to Jefferson's personal interests.¹⁷ Or Jefferson may have been motivated to appoint Williams due to his resemblance to his famous relative, Benjamin Franklin, whom Jefferson greatly admired. In a biographical sketch of Jonathan Williams, General Swift, one of the Academy's first graduates, recollected that "Mr. Jefferson used to say that Colonel Williams resembled his relative Dr. Franklin in many points of Character and Mind. . . ."¹⁸

Thomas Jefferson, like Franklin, believed that the results of science should be practically applied to everyday life and used to benefit mankind.

¹⁶Mildred E. Lombard, "Jonathan Williams," Dictionary of American Biography (New York: Charles Scribner's Sons, 1936), Vol. XX, pp. 280-282; Bergh, op. cit., Vol. IX, pp. 346-348; Julian P. Boyd (ed.), The Papers of Thomas Jefferson (Princeton: Princeton University Press, 1953), Vol. VII, pp. 647-648; Williams to McHenry, June 21, 1800, copy of MS in Lilly Library.

¹⁷This idea is advanced by Stephen E. Ambrose, Duty, Honor, Country (Baltimore: Johns Hopkins Press, 1966), p. 18.

¹⁸Joseph G. Swift, "Biographical Sketch of Jonathan Williams" (cited previously as MS 1301), MS in USMA Library. Cited hereafter as "Biographical Sketch of J. W."

He had admired Franklin for his endeavors to direct the results of his scientific experiments to "something useful in private life."¹⁹ Probably aware that Williams' scientific temper was similar to Franklin's, he may have envisaged a school that encompassed both theory and practice dedicated broadly to military science and internal improvements. Whatever his motivation may have been, it appears significant that he appointed a man as versatile as Williams to head the infant academy as opposed to someone whose interests and abilities were strictly military.

On December 14, 1801, Major Jonathan Williams was appointed Inspector of Fortifications and directed to repair to West Point to take on the superintendency of the military school.²⁰ Four days later he was directed to investigate charges that had been brought against Mr. Baron, the mathematics teacher.²¹ On the following day Williams was ordered to inspect and report on the fortifications in Massachusetts, Connecticut, Rhode Island, and New York as to their construction, nature, state of decay and number of cannon by the twentieth of January.²² Thus, within five days of his appointment, one of the major difficulties Williams was to face during his superintendency

¹⁹Jefferson to Thomas Cooper, July 10, 1812, Bergh, op. cit., Vol. XIII, p. 176.

²⁰Dearborn to Williams, December 14, 1801, LSMA, Vol. I, p. 136.

²¹Dearborn to Williams, December 18, 1801, LSMA, Vol. I, p. 136.

²²Dearborn to Williams, December 19, 1801, LSMA, Vol. I, p. 139.

became apparent. As Inspector of Fortifications, in addition to Superintendent of the Military Academy, his duties were varied and he was often absent from the Academy, with the day-to-day direction of its affairs falling on other shoulders. Not only was he subject to duty at any time in any place, but the Act of March 16, 1802, further directed that "the engineers, assistant engineers, and cadets of the said corps, shall be subject, at all times, to do duty in such places, and on such service, as the President of the United States shall direct."²³ Therefore, the entire Corps of Engineers could be called to duty and in practice the officers constantly were.

While the primary purpose of the Act of March 16, 1802, was to reduce the military peace establishment, three sections gave life and official sanction to the formation of a military academy. Section 26 authorized the President to establish a separate Corps of Engineers to consist of not more than twenty officers and cadets. As a result of Section 27, the Corps of Engineers was stationed at West Point and was subject to active duty upon the direction of the President. Section 28 provided for the principal engineer to have superintendence of the Military Academy and authorized the Secretary of War to procure the necessary books, apparatus, and implements for the institution.²⁴

This Act provided Williams with his only direction pertaining to the Military Academy. He later wrote to a friend,

²³Annals of Congress, 7th Congress, 1st Session, 1801-1802, p. 1312.

²⁴Ibid.

. . . from the moment I was appointed to superintend the Military Academy and to command the Engineers, I have not received from the Secretary of War, one word descriptive of the plan of the institution and the Education expected, except merely Hutton's Mathematics, . . .²⁵

Despite the apparent lack of direction, Williams did have personal plans for the Military Academy that surfaced during the year of 1802. One of his first tasks was to purchase books and supplies for the cadets' instruction.²⁶ In February, after investigating charges brought against Mr. Baron, Williams recommended his dismissal.²⁷

In concordance with the Act of March 16, 1802, Jonathan Williams was appointed Major of the Corps of Engineers on April 12, 1802.²⁸ Shortly thereafter, Captain William A. Barron and Captain Jared Mansfield were appointed to the Corps of Engineers and directed to West Point under Williams' command.²⁹ Mansfield was a graduate of Yale and in 1801 had published a book entitled Essays, Mathematical and Physical in which he dealt with problems in algebra, geometry, calculus, nautical astronomy, gunnery, and ballistics. This book, considered to be the first book of mathematical researches by a

²⁵Williams to Major W. W. Burrows, July 17, 1803, copy of MS in USMA Library.

²⁶Dearborn to Williams, January 20, 1802, LSMA, Vol. I, p. 148; Williams to Dearborn, February 4, 1802, copy of MS in Lilly Library.

²⁷Dearborn to Williams, February 11, 1802, LSMA, Vol. I, p. 150.

²⁸Dearborn to Williams, April 13, 1802, LSMA, Vol. I, p. 191.

²⁹Dearborn to Williams, June 11, 1802, LSMA, Vol. I, p. 229.

native American, brought him prominence as a man of science and the attention of President Jefferson.³⁰ William A. Barron was a graduate of Harvard, where he had tutored in mathematics.³¹ Williams was promoted to lieutenant colonel on June 11, 1802, and officially took up residence at West Point on July 4, 1802. This date by many is considered the formal opening of the Military Academy.³²

The student body at this time was small, composed of cadets and junior officers assigned to either the Corps of Artillerists, also quartered at West Point, or the Corps of Engineers. By the Act of March 16, 1802, the Artillerists were allowed forty cadets with the pay of ten dollars per month, while the Engineers were allowed ten cadets with the pay of sixteen dollars per month.³³ Hence, the practice developed to appoint cadets in the artillerists, and only near the end of their study to promote them to the Engineering Corps. Estimates of the number of cadets in residence during the first year of the Academy's existence vary from nine to twelve. In a

³⁰Alois F. Kovarik, "Jared Mansfield," Dictionary of American Biography (New York: Charles Scribner's Sons, 1936), Vol. XII, pp. 256-257.

³¹George W. Cullum, Biographical Register of the Officers and Graduates of the U. S. Military Academy (Boston: Houghton, Mifflin and Company, 1891), Vol. III, p. 487.

³²Centennial, op. cit., p. 224.

³³Annals of Congress, 7th Congress, 1st Session, 1801-1802, pp. 1306-1307 and 1312.

report issued in 1808, Williams says of these early days, "The two captains taught mathematics; the one in the line of geometrical, the other in that of algebraical demonstrations."³⁴ Williams "occasionally read lectures on fortifications, gave practical lessons in the field, and taught the use of instruments generally."³⁵ Swift remembered that during the summer of 1802 Williams led the cadets in a survey of the country around West Point to determine the position and altitude of the adjacent mountains.³⁶

The principal texts in use were C. H. Hutton's Mathematics, W. Enfields' Natural Philosophy, Marshall S. de Vauban's Traite de fortifications, and H. O. De Scheel's Treatise of Artillery.³⁷ There was no formal academic structure such as division into classes or a prescribed course of studies. There were no rules and regulations respecting entrance or graduation. Cadets varied in age and academic background. They appeared at the Academy at any time of the year thus making an organized system of instruction almost impossible. There were no internal rules regulating discipline. Perhaps these were not necessary with such a small number of officers and cadets. It may be that the strength of Williams' personality itself

³⁴"Report of 1808," op. cit.

³⁵Ibid.

³⁶Swift, op. cit., p. 35.

³⁷Ibid., p. 36.

was sufficient. The cadets came to see Williams as a friend and advisor. Conversation, in the relaxed atmosphere of his home and at his dining table, became a principal source of instruction in morals, politics, and religion.³⁸

Williams' paternalistic attitude towards his Corps of Engineers is apparent from his correspondence. In a letter to Lieutenant Swift he wrote, "Poor Macomb has just lost his lovely babe. He is under orders to go to Portsmouth, N. H., to direct some repairs there, his Lady goes with him and it will I hope dispel her sorrow."³⁹ Again in a letter he directed Swift to West Point as he has decided to "keep Captain Armistead at Fort Jay as he is a bachelor and can put up with such accommodations as would not perhaps suit Mrs. Swift."⁴⁰

In September, 1802, the first public examinations were conducted by Captains Barron and Mansfield, and shortly thereafter Joseph Swift and Simon Levy, the Academy's first graduates, were appointed second lieutenants in the Corps of Engineers.⁴¹

In November, 1802, Williams initiated a project that he believed would fulfill an essential service to the defense, safety and honor of the country. Believing that ". . . the best means of preserving peace, is to preserve

³⁸"Biographical Sketch of J. W.," op. cit.

³⁹Williams to Swift, August 26, 1805, MS in USMA Library.

⁴⁰Williams to Swift, February 11, 1807, MS in USMA Library.

⁴¹Swift, op. cit., p. 36.

undiminished the science of war . . .,"⁴² he proposed to the officers of the Corps of Engineers that they establish an institution to collect and preserve military science. Patterned largely after the American Philosophical Society initiated by Franklin, the United States Military Philosophical Society was formally organized on November 12, 1802.⁴³ Cadets and officers of the Corps of Engineers were members by right; citizens were eligible to be elected to membership. Meetings were to be held at the Academy, twice a month although not during the Academy's winter vacation. Besides the usual officers a Keeper of the Cabinet was elected whose duties included custody of "all Productions of Nature, and Works of Art that shall be purchased by, or presented to the Society."⁴⁴ In addition, this person also served as Librarian.

Williams wrote to President Jefferson on December 12, 1802, setting forth the purposes and requesting his patronage of the Society. He stated,

The Gentlemen composing the Corps of Engineers, thinking that, besides the duties prescribed to them, as such, it would be the most acceptable service they could at present render to their Country, to select and preserve as far as possible the Military Science, which must still exist in the different States, among the veterans of our own revolutionary contest, and those of our fellow citizens, who have gathered scientific fruits in the course of their

⁴²Jonathan Williams, "Circular," West Point, December 20, 1806, in "United States Military Philosophical Society Extracts of Minutes 1806, 1808, 1809." Cited hereafter as Extracts. Copy in USMA Library.

⁴³Sidney Forman, "The United States Military Philosophical Society, 1802-1813." The William and Mary Quarterly, Vol. II (July 1945), p. 274.

⁴⁴Constitution, U.S.M.P.S. Copy in USMA Library.

travels, have formed a Society, for the purpose of establishing and perpetuating a repository, as well for such knowledge, as may be furnished by past experience, as for what our Citizens, in any walk of life, may in future acquire.⁴⁵

Jefferson answered Williams in the affirmative. "A friend to Science in all its useful Branches, and believing that of the Engineer of great utility, I sincerely approve of the Institution of a Society for its Improvement."⁴⁶ With Jefferson as its perpetual patron, the Society then elected to membership many of the most outstanding men in the country.

During the Society's lifetime a varied collection of scientific reports and studies were communicated to its members. Williams defined science broadly:

Science is in its own nature so diffuse, that it is almost impossible to designate any dividing lines. Astronomy, geography and mathematics run into each other at every step. Chymistry and mineralogy are inseparable. The laws of motion, mechanics and projectiles are also interwoven, and in some way or other (although the extreme points may be distant) the gradations become insensible. Military science embraces all these branches. . . .⁴⁷

The Society's archives eventually contained a vast repository of military science. Varied charts and plans of forts and works upon which the engineers were employed were donated. For example, among others in 1806, the

⁴⁵The United States Military Philosophical Society MS Minutes and Records, Membership Lists, Correspondence and Papers, written for the Society, 1802-1813, in four volumes. MSS held by the New York Historical Society, New York, Vol. I. Quoted by permission.

⁴⁶Ibid., dated December 25, 1802.

⁴⁷Jonathan Williams, "Address to the U.S.M.P.S.," January 30, 1808, Extracts, op. cit.

following were received: A Chart of Charleston Harbour; Plans of Fort Moultrie, Fort Johnson, and Fort Pinckney; a Sketch of the Coast of North Carolina; and a Chart of the Harbour of New York.⁴⁸

A representative sample of the kinds of papers presented to the Society included Alexander Hamilton's Plan of a Military Academy of 1799, a letter from Williams proving that the obstruction called the Falls at Louisville on the Ohio River is a petrified mass of earth and trees, a memoir by Professor De Masson showing the superiority of a breech loading gun over the common musket, notes taken by William Partridge at West Point during an eclipse of the sun, and a memoir by Williams on a new construction of a double gun boat or floating battery.⁴⁹

Books and military artifacts were also presented to the Society. In 1806, Williams contributed thirty-four volumes and sixteen pamphlets on various branches of the arts and sciences. Jared Mansfield presented the Society with a volume of his Essays Mathematical and Physical and Major Alexander Macomb presented his Treatise on Martial Law. The Society also received eight manuscript books containing all the orders issued by

⁴⁸"Minutes of the U.S.M.P.S.," October 6, 1806, Extracts, op. cit.

⁴⁹Ibid. Williams said of the memoir on the double gun boat, "I acknowledge that I got the first hint from Dr. Franklin, . . ." Williams to Jared Mansfield, December 30, 1805. Rough draft of MS in Lilly Library.

General Wayne in his late battle with the Indians. Zebulon Pike made a gift of an escopate, a carabine of the Spanish cavalry, to its collection. Eventually, the Society's archives became an international center for the study of military science.⁵⁰

Although its express purpose was to collect and preserve military science, in actuality its influence and scope encompassed much more. It went beyond being a mere repository of past experience; it served to promote practical experiment and pursuit of new knowledge in natural philosophy and mathematics, encouraged publication of military books, and contributed to the dissemination of science generally and military science specifically to all quarters of the country.

As a supplement to the cadets' education, the Society's contribution cannot be overlooked. Cadets being members of the Society by right were involved in the discussions and presentations and given access to the plans, reports, books, and artifacts collected in its archives. The Society rounded out many of the more theoretical aspects of the Academy's curriculum.

Many of its members were among the most prominent men in America such as John Q. Adams, George Clinton, Dewit Clinton, Robert Fulton, Thomas Jefferson, James Madison, General John Marshall, James Monroe and General James Wilkinson.⁵¹ Many of the Society's members were in

⁵⁰"Minutes of the U.S.M.P.S.," October 6, 1806 and January 30, 1808, Extracts, op. cit.

⁵¹"Membership List, January 30, 1808," Extracts, op. cit.

positions of influence in the country, and public support was desperately needed if the Military Academy was to succeed. By reaching out to these influential persons, Williams brought the subjects of scientific and technical education to the attention of many who would later assist in the further development of the Military Academy.

The Society largely derived its impetus from Williams' personality. Williams served as president during its entire existence. When Williams resigned from the Corps of Engineers in 1812, the Society rapidly decreased in force and energy. On November 1, 1813, the Society voted to disband.⁵²

Besides the United States Military Philosophical Society, Williams had further plans for the cadets' instruction which he submitted in a paper to the Society on December 14, 1802.⁵³

Repeating that the best guarantee of peace and independence is a country's readiness for defense and expertise in the science of war, Williams discussed the scope that military science must embrace. Apparently answering critics who did not believe a scientific background was necessary for military defense, he stated,

⁵²Forman, op. cit., p. 284.

⁵³"Statement of December 14, 1802, Relative to the State of the Corps of Engineers and Military Academy with some proposed improvements presented to the United States Military Philosophical Society by their President." Original draft of MS in USMA Library. The following quotations were all taken from this source. MS was not numbered.

The art of Fortification, however simple it may seem to a superficial beholder, is so based on Mathematical, Mechanical, and Philosophical Principles, that Errors are liable to occur at every step, which without a Scientific Guide would tend to destroy the object aimed at, and might instead of defense furnish the enemy with an additional means of attack.

He continued that these considerations doubtless are at the basis for the organization of a Corps of Engineers that would at the same time constitute a Military Academy. But he emphasized that this is not enough.

"Efficient military Science requires a larger Scale. It requires that practice should go hand in hand with theory and that Soldiers as well as Officers should know the principles of their Profession. . . ."

Lieutenant Colonel Williams, therefore, proposed that "The members of the Corps being tolerably advanced in the theory of their profession, it becomes important to establish the truth of that theory by actual Experiments." He further stated that the station of West Point is perfectly suited for these purposes since the buildings and works are in a state of ruin, and there is "abundant Space for every species of military improvements."

To put these suggestions into effect, he recommended that a trained body of artificers--carpenters, masons, joiners, blacksmiths, armourers, and wheelrights--be attached to the Corps of Engineers. In addition, miners, bombardiers, and musicians⁵⁴ were necessary. The whole body would total 110.

⁵⁴Williams said "Music is the grand Spring of Military Spirit. . . ." and recommended, in addition, forming a school of Military Music. This may be the first recommendation of this kind in America.

With this body of men the Corps of Engineers would then be equipped to test theory in practice and experiment in military science. At the same time they could construct buildings for the Academy and works necessary for the defense of West Point.

Williams did not limit instruction to the officers and cadets in his proposal. He believed that the noncommissioned officers should have mathematical training and be invited to hear public lessons. 'Besides which so much experimental Philosophy as belongs to the Mechanic Arts especially what relates to saving a Labour should be expressly taught to all the men.'

In addition, to the body of men under the denomination of Artificers, Bombardiers and Miners, Williams recommended that the Professors of Mathematics be stationary and that two others be appointed to perform their military duties. He further recommended that the law be flexible enough to allow the appointment of additional teachers when needed.

During the ten years that Williams headed the infant Academy, he was not to realize his plans for its success. It was not until three months before his final resignation, April 29, 1812, that an act was passed by Congress embodying many of the recommendations that Williams patiently and continuously sought.

On February 28, 1803, at Williams' request Congress authorized the President "to appoint one teacher of the French language and one teacher

of Drawing to be attached to the corps of engineers."⁵⁵ In addition, Congress authorized Williams to enlist one artificer and eighteen laborers to assist the engineers.

The addition of French and drawing to the curriculum was not surprising as both are natural adjuncts to military science. France, at this time, was the leading scientific and military power. The best textbooks in the applied sciences and mathematics were in French, and some of these were among the early texts used at the Academy. Knowledge of French was a necessity for the study of engineering subjects.⁵⁶ Drawing was important to map harbors, sketch works and fortifications, and in general assist in all aspects of military engineering. In July, a Frenchman, Francis De Masson, was appointed to fill both positions. Williams not only brought French to the Academy's curriculum but he proposed the method by which it should be taught. He advised De Masson that knowledge of a living language can be acquired most efficiently through its use conversationally and socially.⁵⁷

During the summer of 1803, a problem arose that was to plague Williams during his entire career as Chief of the Corps of Engineers and

⁵⁵Annals of Congress, 7th Congress, 2nd Session, 1802-1803, pp. 1565-1566.

⁵⁶John R. McCormick, "History of Foreign Language Teaching at the United States Military Academy," Modern Language Journal, Vol. LIV (May, 1970), pp. 319-323.

⁵⁷Williams to De Masson, August 24, 1805. Rough draft of MS in Lilly Library.

which colored much of his personal and professional correspondence. At the time of the Revolutionary War, all engineers in the employ of the American army were foreigners. Thus the policy began of using engineers as staff officers without command responsibilities. The policy became tradition, and while circumstances changed, the principle remained. Questions of command arose at West Point between Williams and the presiding officer of the Corps of Artillerists. When Williams took the question to Secretary of War Henry Dearborn, he was told that "the Engineers were to be considered in the nature of Brigade Majors (these were his words) and not entitled to the command of Posts."⁵⁸ Williams immediately resigned.

Williams felt very strongly that this issue was a matter of personal honor. He was to write in 1812:

. . . that unless the Corps of Engineers be entitled according to the seniority of its officers, to the Command of any Fort or Post wherever they may be stationed, it never can be a respectable Corps nor can the command of it confer Honour on any Officer who may be at the Head of it.⁵⁹

During his absence he was repeatedly urged by the officers of the Corps of Engineers to return. One officer wrote in 1804, ". . . never was West Point so much in want of you as at this moment. Everything is going to ruins."⁶⁰ It appeared that both the President and the Secretary of War

⁵⁸Williams, "Report on Circumstances Regarding his Resigning from the Corps of Engineers." Copy of MS in USMA Library.

⁵⁹Williams to Swift, October 9, 1812, MS in USMA Library.

⁶⁰Cullum, op. cit., p. 499.

also wished for his reinstatement, for General Wilkinson stated, "I can report nothing more than that I know both the President and Secretary wish you to resume your commission, but there are delicacies on both sides, which I shall labor to accommodate."⁶¹

The President and Secretary of War's offer was to reappoint Lieutenant Colonel Williams under the old conditions, that is, he and his engineers had no authority in matters of discipline, policy, or command of the troops of the line. However, he did concede that engineers can be given such powers at the express orders of the President. Thus, the President held in trust the engineers' right to command. Under this proviso, Williams accepted his reappointment as Chief Engineer on April 19, 1805.⁶² Unfortunately, the basic problem still remained and was to arise again in 1812.

For the time being, however, the question was laid aside, and Williams resumed his duties as Chief Engineer and Superintendent of the Military Academy. Upon his return a program of daily studies was adopted: Drills were from five to six a.m. under the leadership of Lieutenant Macomb; mathematics was studied from eight to eleven a.m. with Professor Barron; French and drawing alternated in the afternoons from eleven a.m. to one p.m.; study hours were from two to four p.m., and after four p.m. practical exercises in the field were given by Williams.⁶³ Williams solicited the return of

⁶¹Ibid., p. 500.

⁶²Ibid., pp. 502-504.

⁶³Ibid., p. 505.

Professor Mansfield, who in November of 1803 had been ordered to the Northwest Territory as Surveyor General; however, Mansfield, whom Williams considered an excellent mathematical instructor, was not to return during Williams' tenure as superintendent. In 1812, he was appointed the first Professor of Natural and Experimental Philosophy, but because of the war he did not resume his teaching duties until 1814.⁶⁴

The financial squeeze that the Academy labored under was accentuated in a series of letters between Williams and Secretary of War Dearborn. At every turn Williams was advised to be penurious. He was requested to purchase only those books that were absolutely necessary as ". . . improvements in the Sciences are so rapidly advancing. . . ."⁶⁵ The cadets were not allowed provision for clothing; after all, the Secretary reminds Williams ". . . these young gentlemen are receiving their education at the expense of the United States. . . ."⁶⁶ At every turn, Williams was thwarted by lack of funds for books, uniforms, a cadet mess, and proper buildings for the Academy.

As Chief Engineer, Williams was frequently absent from the Academy on duties of inspection. In addition to his other duties he was also personally charged with the planning and construction of the defenses of the New York Harbor. In spite of his frequent absences:

⁶⁴Kovarik, op. cit., p. 257.

⁶⁵Dearborn to Williams, March 24, 1806, LSMA, Vol. II, p. 446.

⁶⁶Dearborn to Williams, October 28, 1805, LSMA, Vol. II, p. 392.

The academy . . . was his darling, his favorite child. Whether present or absent his eye was ever directed towards it. All reports whether weekly or monthly were made to him, all regulations or standing orders of any importance either emanated from him, or were issued only after having been approved by him.⁶⁷

He traveled back and forth between New York and West Point in his swift cutter, the Engineer.

While he was absent, the Academy was under the care of Major Barron, the senior officer present. In 1807, charges were brought against Barron:

. . . for conduct unworthy the gentleman and soldier, and suffering prostitutes to be the companions of his quarters and table-- (testimony does not look into the chamber) thereby setting an Example injurious to the morals of the youth and disgracefull to the Institution.⁶⁸

Both Williams' concern for the Academy's reputation and his humanitarian nature are demonstrated here. He proposed to the Secretary of War that Barron be given the opportunity to resign rather than stand trial and bring injury upon the Academy. But he further requested that the secretary find another position for Barron so that he will not be thrown into abject poverty by his dismissal.⁶⁹ Barron chose to resign rather than stand trial and his resignation was accepted on June 15, 1807.⁷⁰

⁶⁷Sylvanus Thayer to G. W. Cullum, February 21, 1853, MS in USMA Library.

⁶⁸Williams to Swift, February 11, 1807, MS in USMA Library.

⁶⁹Williams to Dearborn, March 19, 1807, Records of the Office of the Secretary of War, Letters Received (National Archives). Cited hereafter as LRSW.

⁷⁰Cullum, op. cit., p. 510.

In the meantime Ferdinand R. Hassler had been appointed as a teacher of mathematics on February 10, 1807.⁷¹ Professor Hassler was a Swiss man who had been recommended to President Jefferson by his countryman, Albert Gallatin, then Secretary of the Treasury. Lieutenant Allen Partridge, a graduate of the Academy's class of 1806, had been retained to assist Hassler in the teaching of mathematics.

American foreign relations with both France and Great Britain had been growing steadily worse. Angered by the Chesapeake-Leopard incident in June of 1807 and the continuous violation of American neutrality in shipping, America's war fever rose. President Jefferson, knowing the United States was unprepared for war, temporized by placing an Embargo on all American shipping on December 22, 1807. Enforcement of the Embargo and provision for coastal defenses placed heavy demands upon the Corps of Engineers for increased fortifications. Responsibility for the construction of these defenses was divided among the officers leaving only Lieutenant Partridge with Hassler and De Masson at West Point. Most likely as a result of these strained foreign relations and the extra demands that were placed upon the Corps of Engineers, President Jefferson requested a report from Colonel Williams on the status of the Military Academy.

On March 14, 1808, Williams who had been promoted to Colonel February 23, 1808, transmitted to the Secretary of War an extensive report

⁷¹Dearborn to Williams, February 10, 1807, LSMA, Vol. III, p. 130.

recounting the history of the Academy and enumerating the difficulties under which it had struggled. He then submitted his recommendations for its enlargement and future growth. One concern that was the subject of many of Williams' letters to the Secretary of War, the President and others was the location of the Academy. As early as 1803, Williams had suggested its removal to Washington. Again in this report he listed its location at West Point as one of its major difficulties, and suggested that it be moved to Washington.⁷²

As to the academic staff and organization, he made several proposals. Since he found through personal experience that civilian teachers had difficulty maintaining discipline in a military setting, he recommended that ". . . the professors, when not of army rank, take that of their denominations (as relates to the Academy only) in the manner of Brevets."⁷³ He then proposed the following professorships with the rank or equivalency as indicated: professor of natural and experimental philosophy in all its branches, lieutenant colonel; professor of mathematics, major, with two teachers under him, captains; and a professor of the art of engineering in

⁷²In 1810, Williams made tentative plans with the Governor of New York to move the Academy to Staten Island, but Congress did not act on the proposal. At this juncture one can never know whether the Academy might have prospered from nourishing care or withered from too much interference had its site been removed from West Point.

⁷³Report of 1808, op. cit.

all its branches, major, with a drawing teacher, French teacher and German teacher under him, captains. To this proposed academical staff he advocated the following part-time instructors: professor of architecture, professor of chemistry and mineralogy, a riding-master and a teacher of the small and broad sword. Continuing, he requested the addition of ten officers, nine artificers, and thirty-one men to the Corps of Engineers and the necessary appropriations for buildings, apparatus, and a library.

Finally, he requested Congress to place the future direction of the Academy as to such affairs as the "site, the buildings, and the number and kind of professors, and all other matters connected with the institution,"⁷⁴ entirely to the judgment of the President of the United States.

President Jefferson transmitted Colonel Williams' report to Congress on March 18, 1808, indicating his awareness of the need to expand the present Military Academy. He stated,

The scale on which the military academy at West Point was originally established, is become too limited to furnish the number of well-instructed subjects in the different branches of artillery and engineering, which the public service calls for. . . . The idea suggested by him [Williams] of removing the institution to this place, is also worthy of attention.⁷⁵

Despite the threat of war, and the President's recommendation, the report did not effect any improvement in the Academy's situation or support.

⁷⁴Ibid.

⁷⁵Bergh, op. cit., Vol. III, p. 471.

During the academic year of 1808 staff changes occurred with the appointment of Christian E. Zoeller as teacher of drawing. To this date, De Masson had been teaching both French and drawing. Williams now asked De Masson to take on the duty of teaching engineering, a task which he believed De Masson most competent to perform.⁷⁶ This brought the number of civilian teachers to three. As only two were authorized under the Act of 1803, Congress apparently believing that there would always be an officer of the Engineers teaching mathematics, Williams requested that Zoeller be paid from a war department contingency fund. This was granted.

On March 4, 1809, James Madison took office as President of the United States. His choice for Secretary of War was Dr. William Eustis, who had been a surgeon in the Continental Army. An active supporter of Jefferson, Eustis had been elected to the House of Representatives in 1801 and 1803; so he had some knowledge of the history of the Military Academy.⁷⁷ It gradually became apparent that Secretary Eustis was no friend to the Academy. In November, 1809, he advised Williams that:

It is to be understood that in future, until some further provision is expressly made by Law on the subject, the compensations allowed to Mr. De Masson, Mr. Hassler, and Mr. Zoeller, are not to exceed the amount of pay and emoluments granted by Law to the teacher of the French Language and the Teacher of Drawing.⁷⁸

⁷⁶Williams to Dearborn, June 28, 1808, LSMA, Vol. III, p. 371.

⁷⁷Cullum, op. cit., p. 522.

⁷⁸Eustis to Williams, November 10, 1809, LSMA, Vol. IV, p. 226.

Eustis recommended asking the three professors to share the pay of two. The immediate problem was solved with Hassler's resignation in December.⁷⁹ One way of thwarting the progress of the Military Academy was to do nothing. During the years 1809-1811 Eustis made only two cadet appointments.⁸⁰ He also tried to undermine the conception of a cadet as a junior officer and the policy of granting commissions upon graduation. He wrote to Williams:

After the Cadets shall have completed their Academical Education, it is intended that they shall be attached to Companies and perform Duty as Soldiers in the Line, in order to their becoming Candidates for promotion to Commissions.⁸¹

Williams protested vigorously.

By 1810, the Academy was truly a "foundling barely existing among the mountains."⁸² Professor Hassler had left to take a position at Union College. On April 30, 1810, Professor Zoeller resigned.⁸³ De Masson had been granted a leave of absence beginning April 15, 1810, to go to Europe.⁸⁴ During his absence, his brother Florimond taught French but not

⁷⁹Hassler to Eustis, December 18, 1809, LRSW.

⁸⁰Denton, op. cit., p. 68.

⁸¹Eustis to Williams, May 18, 1810. Copy of MS in USMA Library.

⁸²"Report of 1808," op. cit.

⁸³Cullum, op. cit., p. 529.

⁸⁴Eustis to Williams, March 14, 1810, LSMA, Vol. IV, p. 299.

engineering. When Lieutenant Partridge was granted a leave of absence in July, the academic staff was reduced to one teacher of French, Florimond De Masson, and Williams found it necessary to detail cadets as instructors.⁸⁵

In November of 1810, Williams again submitted a detailed report to the Secretary of War on the state of the Military Academy with recommendations for its expansion. In his covering letter to Eustis one can sense a note of frustration on his part with the powers in Washington. He wrote,

After so much ineffectual writing upon this subject during eight years, it may be wonderfull that I should still persist; the reason is that my zeal is stimulated by motives which can only cease when I cease to exist. Without pretending to the gift of prophesy it appears to my mind that our Destinies point to war. . . .⁸⁶

In particulars this report was similar to the one prepared for the United States Military Philosophical Society in 1802.⁸⁷ Williams again repeated his request for more teachers, brevet rank for civilian teachers, an increase in the size of the officers corps, and the addition of artificers and soldiers. In addition, he recommended that cadets be appointed to the

⁸⁵Cullum, op. cit., pp. 543-544.

⁸⁶Williams to Eustis, November 12, 1810, LRSW.

⁸⁷Actually the report of 1802 served as a rough draft for this report. This was evident from examination of the MS in the USMA Library. Williams had crossed out particular sections and kept others. In the covering letter he stated that he is repeating material from his other reports for the sake of brevity and clarity.

Military Academy initially instead of to a particular Corps. He reasoned pragmatically that after they have received their education is the time to determine where their interests and talents lie.

This report also demonstrated Williams' view of the Military Academy as a college analogous to other colleges of the day, yet serving a different purpose. He stated, "after four years the highest class of cadets should leave the Academy to make room for another class as in all colleges and the proper place for these is the army."⁸⁸ Continuing, he pleaded for immediate commissions for graduating cadets:

It would be a hardship and an undeserved discouragement to put a Cadet who had passed through all his grades with honor in a situation less respectable than that he left, which would be the Case if he were ordered into the ranks of his company as a Cadet. It would operate as an humiliation when he deserved reward.⁸⁹

Secretary of War Eustis replied to Williams on November 30 that "the subject of the Military Academy will be recommended to the consideration of Congress by the President." He continued, "the President and I may add, the whole executive coincide most entirely in the opinion I have ever entertained of the usefulness and importance of this branch of instruction. . . ."⁹⁰

⁸⁸Williams to Eustis, November 12, 1810, LRSW.

⁸⁹Ibid.

⁹⁰Eustis to Williams, November 30, 1810, LSMA, Vol. V, p. 11.

President Madison's annual message to Congress on December 5 did include a strong recommendation for enlargement of the instructional staff and a second academy to be established in Washington or elsewhere. President Madison's message echoed Williams' frequent observations.

In a Government happily without other opportunities, seminaries, where the elementary principles of the art of war can be taught without actual war, and without the expense of extensive and standing armies, have the precious advantage of uniting an essential preparation against external danger with a scrupulous regard to internal safety.⁹¹

Again, Congress did not act. President Madison urged attention to military seminaries once more in his annual report of November 5, 1811.⁹²

Despite the President's support and the imminent threat of war, it was not until April 29, 1812, that Congress finally approved an act making further provision for the Corps of Engineers.⁹³ This act which was second only in importance to the initial act of 1802 in the Academy's history was in large measure a result of Williams' frequent and continual recommendations for enlargement and support of the Military Academy. In it, Williams' suggestions were finally to become law.

⁹¹Annals of Congress, 11th Congress, 3rd Session, 1810-1811, p. 15.

⁹²Annals of Congress, 12th Congress, 1st Session, 1811-1812, Part I, p. 13.

⁹³Annals of Congress, 12th Congress, 1st Session, 1811-1812, Part 2, pp. 2282-2284.

Section one added to the Corps of Engineers two captains, two lieutenants, and two second lieutenants. It further provided that there be attached to this Corps an addition of four sergeants, four corporals, one teacher of music, four musicians, nineteen artificers, and sixty-two men.

Section two authorized the following professorships in addition to the teachers of French and drawing already provided for with the rank indicated: one professor of natural and experimental philosophy, lieutenant colonel; one professor of mathematics, major; and one professor of the art of engineering in all its branches, major. If not taken from the Corps of Engineers, they were to have brevet rank; if taken from the Corps of Engineers, they were entitled to the additional pay and emoluments of that rank. Each professor was allowed an assistant to be taken either from the most outstanding cadets or officers and allowed the pay and emoluments of a captain.

Section three raised the number of cadets to 250 and provided for them to be attached to the Military Academy generally and not to separate Corps previous to their academical instruction. It further regulated that cadets were to be taught all the duties of a private, noncommissioned officer, and officer and be encamped at least three months of each year.

Age and academic regulations were established. Candidates for cadets were to be between the ages of fourteen and twenty-one and well versed in reading, writing and arithmetic. A minimum term of service--five years--was prescribed.

Section four settled the question of a cadet as a junior officer and his placement after he had completed his studies. It provided that:

. . . when any cadet shall receive a regular degree from an academical staff, after going through all the classes, he shall be considered as among the candidates for a commission in any Corps, according to the duties he may be judged competent to perform, and in case there shall not at the time be a vacancy in such corps, he may be attached to it at the discretion of the President of the United States, by brevet of the lowest grade, as a supernumery officer. . . .⁹⁴

Finally, Congress appropriated, in Section five, \$25,000 for erecting buildings, and for providing apparatus, a library, and other necessary items for the use of the Military Academy.

Williams had finally achieved many of the objectives he had recommended during the ten years of his superintendency. The reports of 1808 and 1810 had furnished the basis upon which the Act of 1812 was drawn. Official recognition and favor was at last bestowed upon the Academy. Unfortunately, Williams was never to see their realization in practice.

Between 1810 and 1812, conditions at the Military Academy had grown steadily worse. There were fewer and fewer cadets as those appointed before Eustis took office were graduated and commissioned. Finally, in March 1812, Francis De Masson resigned, leaving the Military Academy without a single instructor.⁹⁵ Before the institution could be put back on its feet, war was

⁹⁴Ibid., p. 2284.

⁹⁵Cullum, op. cit., p. 567.

declared against Great Britain in June of 1812. On June 21, Williams requested he be given command of the fortifications at New York which he had designed.⁹⁶ Williams claimed the command held in trust for him by the President and enacted into law by the 63rd Article of War, April 10, 1806. This article provided that "the Engineers are not to assume, nor are they subject to be ordered on any duty beyond the line of their immediate profession, except by the special order of the President of the United States."⁹⁷ The President directed the requested command be given and the Secretary of War transmitted his orders to General Bloomfield. While the General was drafting the orders, a group of eighteen junior artillery officers petitioned that they not be placed under the command of an Engineer. General Bloomfield temporized, waiting for further instructions from Secretary Eustis. When Williams heard this he immediately sent in his resignation.⁹⁸ While there were some personal jealousies and petty politics that entered into both of Williams' resignations, the primary and tantamount factor was honor. Williams felt that he and his Corps of Engineers could not command any respect or fulfill their responsibilities without the right to command troops.

⁹⁶Williams to Eustis, June 21, 1812, LRSW.

⁹⁷Cullum, op. cit., p. 571.

⁹⁸Williams, "Report on Circumstances Regarding his Resigning from the Corps of Engineers," copy of MS in USMA Library; Cullum, op. cit., pp. 570-575; Williams to Eustis, July 10, 1812, LRSW; Williams to Swift, July 24, 1812, MS in USMA Library.

Colonel Williams had difficulty accepting the narrowness and tradition-bound thinking of both Secretaries, Eustis and Dearborn. After his resignation Williams wrote to Swift who 'ad assumed command of the Corps of Engineers:

There is one point which you should always keep in mind. The Corps of Engineers is a national establishment, and unduly different from the kind foreign Engineers of the Revolution. A set of strangers came hither to seek their fortunes, and the first necessity was to exist; these were employed to build fortifications and they had no more to do with rank and command than Waggon masters have and the ruins at West Point are monuments of their service. Dearborn, Eustis, and all those who know nothing but what they learned in the Revolution are perpetually comparing the Corps of Engineers to a sett of hirelings who were employed on the spur of the occasion, and to whom the policy of the Country refused the Command of Posts. . . . This mania of making the habits of the Revolution paramount to all subsequent experience is the source of all the difficulty the Corps has had to contend with, but you may as well attempt to make a plumb pudding with pebbles, as to beat any other idea into the Heads of Dearborn, Eustis and Burbeck.⁹⁹

Williams, unlike many of his contemporaries, was a figure of the Enlightenment. The time he spent abroad, and most significantly, his tuteledge under Franklin, made him a man of varied interests with a tolerance and openness for new ideas. His mind, like Franklins', subjected new experiences to experiment; traditions were constantly re-examined. At a time when many of his contemporaries could not rise above previous experience, Williams was searching for new and more pragmatic methods of approach.

⁹⁹Williams to Swift, October 9, 1812, MS in USMA Library.

At the time of Williams' resignation, there were eighty-nine graduates of the Military Academy. That the purposes of the Academy had met with success can best be exemplified by the service of its graduates in the War of 1812. Joseph G. Swift, the Academy's first graduate, became Chief Engineer following Williams' resignation.

The lieutenant-colonel in 1812 was Walker Keith Armistead, of Virginia,--the third graduate, who planned the defences of Norfolk. Major William McRee, of North Carolina, became Chief engineer to General Brown, and constructed the fortifications at Fort Erie, which cost the British General Gordon Drummond the loss of half his army, besides the mortification of defeat. Captain Eleazer Derby Wood, of New York, constructed Fort Meigs which enabled Harrison to defeat the attack of Proctor in May, 1813. Captain Joseph Gilbert Totten, of New York, was chief engineer to General Izard at Plattsburg, where he directed the fortifications that stopped the advance of Prevost's great army. None of the works constructed by a graduate of West Point was captured by the enemy; and had an engineer been employed at Washington by Armstrong and Winder, the city would have been easily saved.

Perhaps without exaggeration the West Point Academy might be said to have decided, next to the navy, the results of the war.¹⁰⁰

Most significantly, there came the sudden realization that the Military Academy had developed into a school for scientific engineering introducing "a new and scientific character into American life."¹⁰¹ At a time when most

¹⁰⁰Henry Adams, A History of the United States of America During the Administration of Jefferson and Madison (New York: Charles Scribner's Sons, 1889-1891), Vol. IX, pp. 235-236.

¹⁰¹Ibid., p. 236.

colleges were still repositories of a rigidly classical tradition, the United States Military Academy had pioneered as an institute of scientific technology. It "paved the way to the acceptance of science as a worthy part of the curriculum in institutions of higher learning."¹⁰² It became the first civil engineering school in the United States and held preeminence as the foremost engineering school in America until the Civil War. At a later date to meet the expanding need for engineers in all manner of civil occupations, graduates were encouraged to resign and accept civilian engineering jobs.¹⁰³

Many West Pointers who did not become civil engineers themselves became teachers of civil engineering. West Point's texts were used at Rensselaer Polytechnic Institute; Academy graduates were among the first teachers at Lawrence Scientific School in Harvard and Sheffield Scientific School at Yale.¹⁰⁴ The Davis commission in 1860 summarized the value of West Point's graduates to America by declaring:

Nearly all the great public works of the country, the river and harbor works, the lighthouses, and even the public buildings, have been directed by its graduates; they were the pioneers in the construction of railroads, and among the teachers of that art; and the great scientific works of the government have been chiefly conducted by them.¹⁰⁵

¹⁰²Superintendents Curriculum Study (West Point, New York, 1958), p. 3.

¹⁰³Ibid., p. 17.

¹⁰⁴Stephen E. Ambrose, Duty, Honor, Country (Baltimore: Johns Hopkins Press, 1966), pp. 123-124.

¹⁰⁵Ibid., pp. 145-146.

After his resignation, Williams retired to his country home on the banks of the Schuylkill in Philadelphia. In grateful appreciation the Corps of Engineers commissioned Sully to execute a full length portrait of Williams which now hangs in the West Point Room of the Military Academy's Library. The Legislature of the State of New York honored him for his services in preparing and executing plans for the defense of the harbor of New York by commissioning him a brevet Brigadier-General in the State Militia in 1815.¹⁰⁶

Williams did not retire long from public service. He served as a member of the Committee of Defense of the Delaware River and Bay. He was frequently consulted respecting the fortifications of the New York Harbor and affairs of the Military Academy. In 1814, he was elected by the citizens of Philadelphia to Congress; however, he was not to fulfill this final service for his country, due to his death on May 16, 1815.¹⁰⁷

¹⁰⁶Cullum, op. cit., pp. 578-579.

¹⁰⁷Ibid., p. 579.

CHAPTER V

EVALUATION

The purpose of this paper was to investigate the possibility that there existed a connection between the ideas of Benjamin Franklin and the curriculum and organization of the United States Military Academy. The connecting link was Jonathan Williams, Franklin's grandnephew and the first superintendent of the Military Academy. The investigation led to a study of the contributions of both Franklin and Williams to educational theory and practice. In addition, it explored the relationship between these two men. In attempting to isolate the contributions of each man, the writer has come to the realization that no philosophy, no institution, no new alternative occurs in a vacuum. Man's ideas are but the synthesis of existing beliefs and the experience of his environment. Ideas, which in retrospect appear unique or novel, are the expected consequences of an inquisitive intellect engaged in a cultural milieu that is generative to these ideas. In addition, an individual cannot propel history (events, movements, ideas, etc.) into channels for which the environment and the human material are not prepared. For example, no court could have brought school integration to the south at the conclusion of the Civil War.

The development of a utilitarian educational philosophy and the formation of a military academy were inevitable. As the country developed commercially, scientifically, and politically, these alternatives became unavoidable. Franklin's advocacy of a utilitarian education was courageous but not without precedent. Locke and Milton, whom he quoted copiously, advocated similar ideas. The Penn Charter School operating in Philadelphia at that time offered a practical course of studies. The private schoolmasters were thriving under the demand for a more useful and vocational kind of education. Gradually, Americans were becoming ready for a new type of educational experience. Had Franklin not become an exponent of this philosophical trend in education, another powerful voice eventually would have been raised in his stead.

However, this is not to say that men do not leave a personal imprint upon other men or upon the development of an institution or a philosophy. One might liken the individual in historical development to the fine brush strokes on a canvas that add depth, feeling, and detail. The broad strokes suggest a general idea or trend; yet, the fine lines add the richness and dimension that are singular to man's life. In other words, the general evolutionary process is influenced by all men--the particulars, by individuals. Both Franklin and Williams left their own personal stamp upon educational philosophy and the United States Military Academy. Most importantly to this paper, Franklin left his impression upon his grandnephew, Jonathan Williams.

The outstanding individual often plays a leadership role in historical development. Through keen perception, acute intelligence, and a sensitivity

to his environment, the leader foresees the direction of future events. He prepares or paves the way for new alternatives. He acts as a model for others to follow. Most certainly, Franklin played a leadership role in the development of American educational philosophy. In his person, existing educational thought and the experience of the American environment were synthesized and personalized. From him there came the design for a distinctive American institution that was most suited to the American educational scene.

In his consideration of education, Franklin applied an intellect unhampered by traditional restraints. He, himself, was not a product of any educational institution nor affiliated with any religious denomination. From an unbiased position, he was able to appraise the classical curriculum and to realize its unsuitability to meet the demands of the new socio-cultural environment. He openly criticized the practice of devoting the major portion of the student's academic years to the study of the classical languages, recognizing this tradition as obsolete.

Bringing reason and the data of his own experience to the subject of education, he first assessed the purposes that formal education should serve in the American environment. Franklin saw education as not only a means of personal fulfillment and growth but as a necessary ingredient to the material progress of the country. Franklin believed that education should be secular, divorced from ecclesiastical purposes, and designed to prepare future leaders for the commercial, political, and scientific realms of the new country.

Franklin specifically designed a curriculum that would enable youth to meet the demands of a developing country for a growing number of middle class occupations and professions. He believed that education should be useful and practical in that it equipped youth for an occupational goal. He advocated the study of English, mathematics, science, and history for practical reasons. He brought the attention of educators to the benefits of including these subjects in the curriculum of a formal institution of learning.

Franklin was ahead of his time in his educational proposals. His immediate influence was negligible. But the prestige of his voice, added to others who proposed similar designs, gave force to a movement in educational philosophy that has only found its full expression in the twentieth century. Most simply stated, Franklin's contribution to American formal educational philosophy was the leadership role that his fame and prestige as a philosopher allowed him to play in the development of the utilitarian trend in American education.

Williams' contributions to the field of education were not as encompassing as Franklin's; yet, while his influence was felt in only one school, that school had important ramifications both educationally and politically. Under Williams' direction, the United States Military Academy became the first civil engineering school in the country. It held preeminence in this area until the Civil War. In addition, it contributed to an increase in scientific knowledge and led the way to science becoming a respectable subject in institutions of higher learning.

Williams' educational plans were directed towards the purposes for which the school was intended. At no time while under Williams' direction was there a leaning towards a classical curriculum. The curriculum was both theoretical and practical. Mathematics and all branches of science were studied, followed by practical exercises in the field. It was Williams who initiated the more practical aspects of the curriculum. Any educational policy decisions that he made or recommended were always consistent with the purposes of educating military engineers.

Williams may also be credited with keeping the Academy alive through a period when political inertia and indifference might have daunted a lesser man. His tireless work in support of the Academy led to the passage in 1812 of an act which not only expanded its scope but finally brought official recognition and sanction to the organization and purposes of the Military Academy.

The function of history is to bring to light new information, not necessarily to make judgments. However, it is this writer's belief that the purposes of this paper would not be served without concluding with a personal evaluation.

The question raised was how much influence can we attribute to Benjamin Franklin for the direction that the United States Military Academy took in its initial development. The answer to this question is not measurable in any scientific way. But just as the total quality of a mother's influence

upon a growing child can never be described, yet all know it exists, so Franklin's influence on his grandnephew, Jonathan Williams was pervasive and powerful.

During Williams' lifetime, Franklin was one of the most respected and admired figures in the western world. In science as in politics, his was a dominant intellect. Williams had the advantage of his close personal friendship and confidence for nearly twenty years. In all of Williams' writings, a deep sense of admiration and respect for Franklin pervaded. In addition, he continually repeated his gratitude to Franklin for his friendship and teaching.

It is this writer's belief that Williams patterned himself to a large degree upon Franklin. Becoming involved in the same activities as Franklin, he kept himself in close physical proximity to him for over fifteen years. From the position of Franklin's assistant in scientific experiments, he followed through with an interest in science as great as Franklin's own. His scientific temper was akin to Franklin's in that it was directed towards the useful and practical. Like Franklin, he was not bound by tradition. He subjected new experiences to experiment and brought reason to bear upon present problems regardless of their past history. Like Franklin, at the age of fifty, he began a totally new career with the inner confidence of a man whose faith in himself was unshaken. As superintendent of the Military Academy, he initiated a military society for the advancement of science like Franklin's philosophical society. During his lifetime he approximated Franklin's versatility though on a lesser scale.

President Jefferson's choice of Williams to head the fledgling Military Academy probably was influenced by the latter's relationship to Franklin. Williams came to Jefferson's attention first while in Paris with Franklin. Later, Jefferson and Williams kept in touch through their mutual interest in science and membership in the American Philosophical Society. Jefferson openly admired Franklin for his practicality in the realm of science. He knew Williams to be Franklin's protege in science, and Williams' book on Thermometrical Navigation was proof that Williams like Franklin was interested in the practical application of scientific research. It is also possible that Jefferson thought Williams' relationship to Franklin might bring some prestige to the Academy.

From the respect that Williams held for Franklin, it is reasonable to assume that he approximated many of Franklin's ideas as his own. When he became head of the Military Academy, it is inconceivable that he would not have recalled any conversations that he might have had with Franklin regarding education. During Franklin's last summer, while Williams resided in Philadelphia visiting him frequently, Franklin was preoccupied with writing a long paper condemning the trustees of the Philadelphia Academy with their neglect of the English school. It is unlikely that this subject did not enter into their conversations during that summer and that Williams did not have some knowledge of Franklin's views on education.

However, even aside from any foreknowledge that Williams might have had of Franklin's educational views, there were clear philosophical similarities

between Franklin's thought and the Academy's nature. These can best be explained through the vehicle of Williams. Williams' educational plans and the formative stages of the United States Military Academy were entirely consistent with Franklin's educational thinking. Franklin believed in military preparedness. The Military Academy's goals were defensive rather than offensive. Franklin believed that education should prepare the individual for service to the state as well as for personal fulfillment. The graduates of the Military Academy in its earlier days fulfilled a service to the state that far exceeded their number. The Academy produced engineers whose skill was put to work building the new country. So desperately were they needed that these men were encouraged to leave the military and to put their talents to work for civil concerns. Academy graduates were among the first teachers of scientific subjects in other institutions of higher learning. Franklin believed that formal education should include those subjects that best equipped the individual for his future occupational goal. Under Williams' direction the Academy was both theoretical and practical with the curriculum geared to a definite vocational purpose--military engineering. The curriculum included mathematics, natural philosophy, engineering, French, drawing, and practical experiences in the field. Franklin recommended that the trustees look upon the students with a personal interest. During Williams' tenure, he was the dominant figure in the lives of the cadets and engineers. He looked upon them as his own children and attempted to round out their education through personal conversation and practical experience.

The United States Military Academy's educational format was unique in comparison to other American colleges. Its guiding philosophy was utilitarian. It is this writer's belief that the educational ideas of Benjamin Franklin, preserved by Williams, became the dominant characteristics of the early stages of the Military Academy.

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APPENDIX

THOMAS FLEMING
315 EAST 72ND STREET
NEW YORK, N. Y. 10021

October 28, 1972

Dorothy J. Zuersher
School of Education
The University of North Carolina
Greensboro, N. C. 27412

Dear Ms. Zuersher:

Thank you for your letter of October 13th. I can't say that I came across any unusual research material on Franklin's educational ideas. No doubt you are well acquainted with his original plan for the Academy in Philadelphia, his "English" education which was an attempt to get the dead hand of the classics off the backs of future Americans. But I do think there is ample evidence that he believed very intensely in this project, and was bitterly disappointed when William Smith double crossed him, and completely revised the curriculum, along traditional lines. It is particularly significant, I think, that in June, 1789, nine months before he died, Franklin spent a great deal of time writing "Observations Relative to the Intentions of the Original Founders of the Academy in Philadelphia." This was time that he might have given to his Autobiography which numerous friends were imploring him to finish. In his conversations on education with Benjamin Rush and in this essay, Franklin made fierce attacks on a classical education.

If Franklin's ideas had been followed and given an adequate test, I think he would be considered one of the leading educational thinkers in our history.

I also think there is a connection between Franklin and the later educational history of the United States in a most unlikely place -- The U. S. Military Academy at West Point. I published a history of West Point in 1969, before I wrote my biography on Franklin. I saw the connection but did not explore it in "The Man Who Dared the Lightning"

Dorothy J. Zuersher

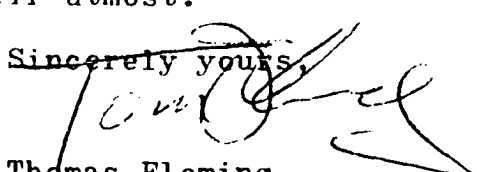
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October 28, 1972

because I had no room for such departures in that book which was already too long. The Franklin link is Jonathan Williams, his nephew, who was the first Superintendent of the U. S. Military Academy. Williams spent a great deal of time with Franklin in France. After the war he became a distinguished engineer. He was chosen for his post by Thomas Jefferson, who, as you know, also had strong ideas about education. I think it would be most interesting to explore and compare Franklin's original educational ideas and the curriculum set up at West Point. It certainly has many similarities to Franklin's original plan. Classics were totally ignored, and the emphasis was on science, mathematics, and allied studies. There were, of course, obvious vocational reasons for this curriculum. But these, I think, are only on the surface. West Point's education far transcended what a professional soldier, even an artillerist, needed to know. The school was soon graduating many more people than the army could use. The astonishing number of West Pointers who became professors of mathematics, engineering, chemistry, and the other sciences in American colleges, and a direct link between West Point and the creation of our first engineering schools make me wonder if Franklin, with the help of Thomas Jefferson and Jonathan Williams, did not make an end run on the classicists of his era, and smuggle science into American education under the guise of military necessity.

Unfortunately, I don't have any documentary evidence to support this idea. But I was not looking for it when I wrote my book on West Point. It might perhaps be worth investigating Jonathan Williams' papers to see if there is any supporting evidence there. The library at West Point, and the American Philosophical Society would, I think, be the most obvious places to look for these. West Point's librarians are very historically minded and I know would cooperate with you to their utmost.

Sincerely yours,


Thomas Fleming